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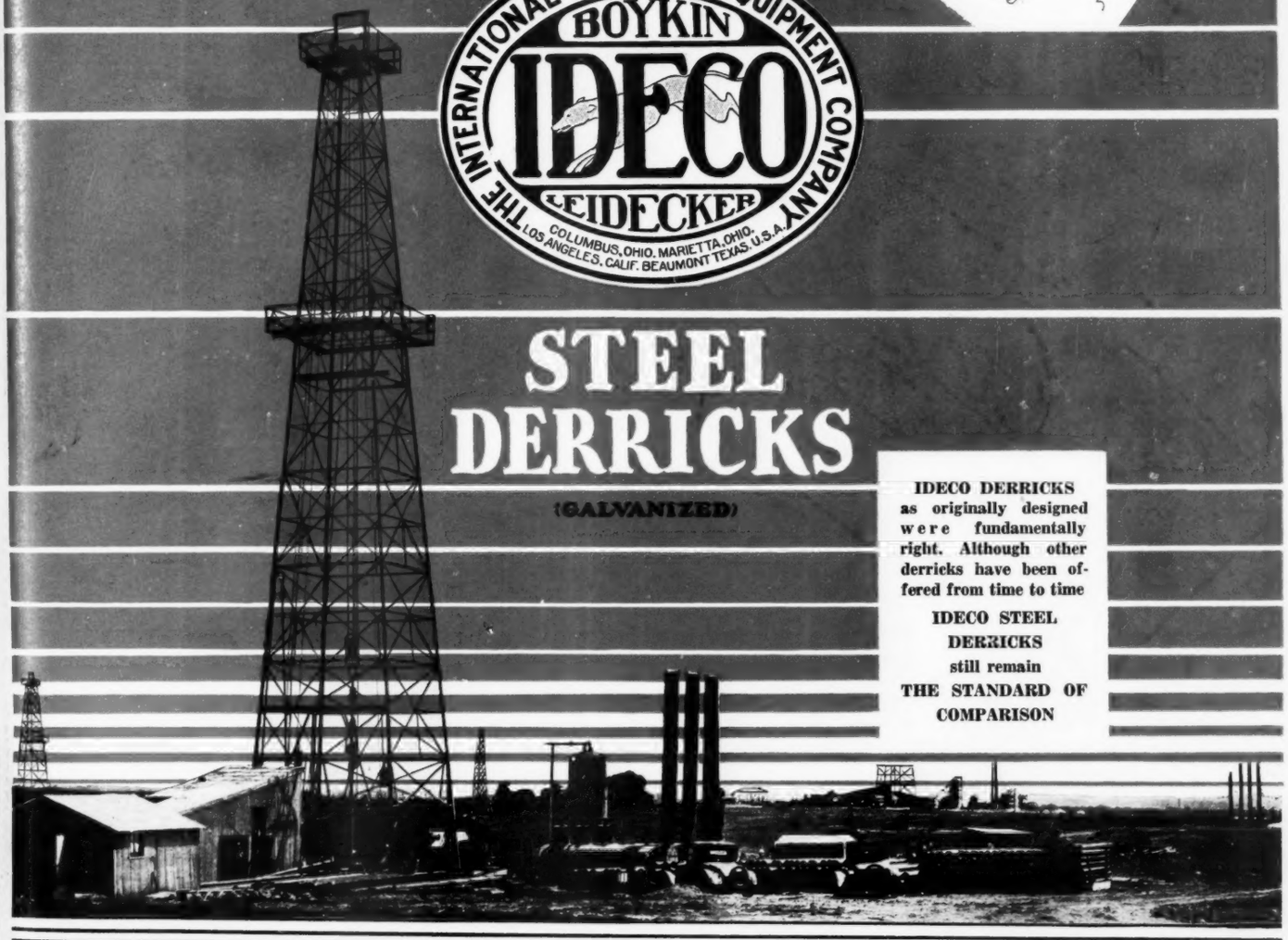

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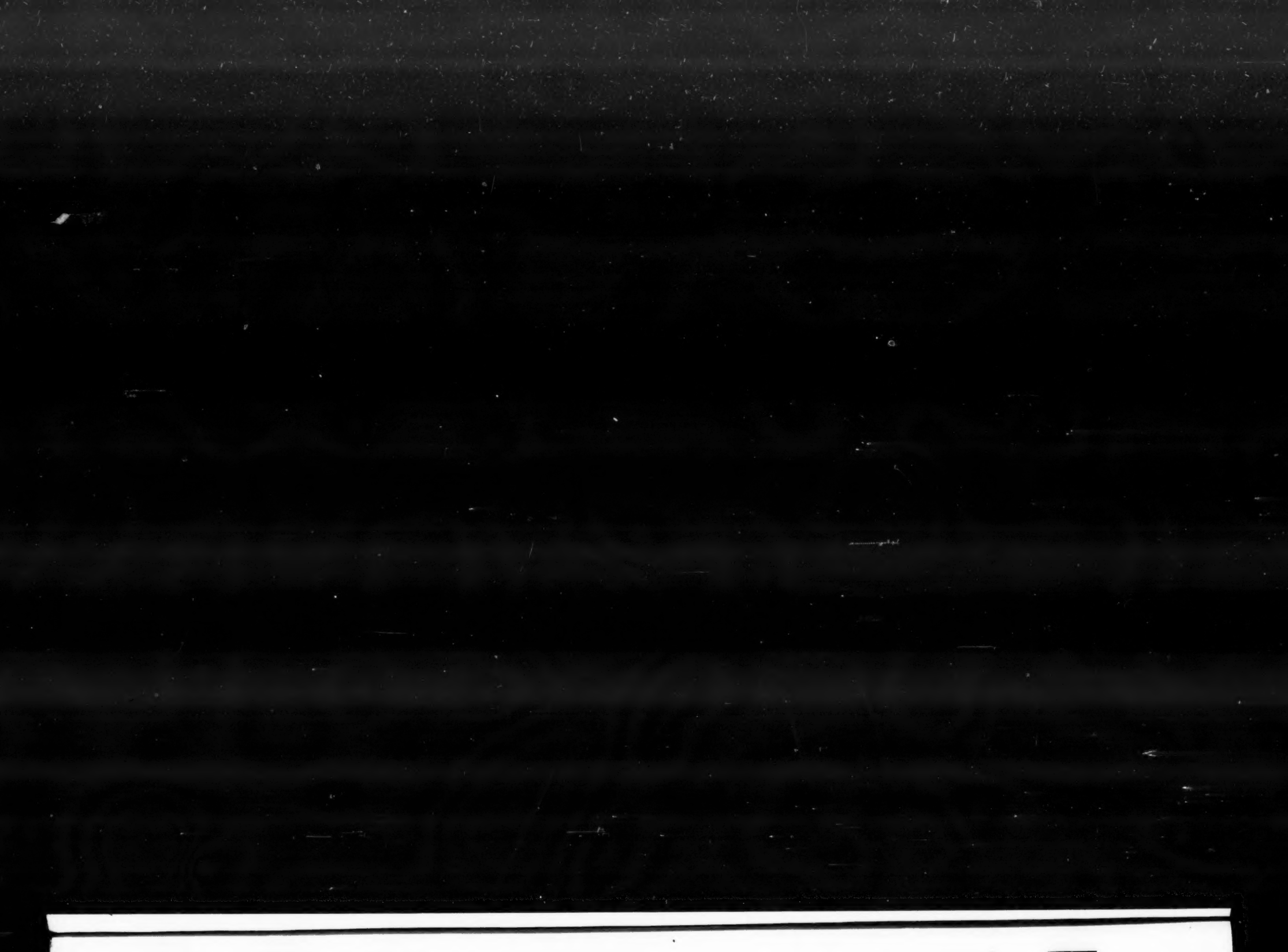

The ADVERTISERS' INDEX

A

Acme Fishing Tool Co.
Air Preheater Corp., The
Ajax Iron Works
Alco Products, Inc.
Allegheny Steel Co.....Inside Front Cover
Allen Corp., The
Allis-Chalmers Mfg. Co.
Allis, Louis, Co., The
Allsteel Products Mfg. Co., Inc., The
Aluminum Co. of America
American Askania Corp.
American Assn. of Petroleum Geologists.
American Cable Co., Inc.
American Cast Iron Pipe Co.
American Iron & Machine Works Co.... 57
American La France & Foamite Corp.
American Meter Co.
American Radiator Co.
American Rolling Mill Co., The
American Schaeffer & Budenburg Corp.
American Sheet & Tin Plate Co.
American Stainless Steel Co.
American Steam Pump Co.
American Steel & Wire Co.
American Steel Works
American Tank & Equipment Corp.... 16
American Well Works, The..... 91
Anchor Post Fence Co.
Armstrong Machine Works
Athey Truss Wheel Co.
Automotive Distillate Corp.
Axelson Mfg. Co., Ltd.
Ayer & Lord Tie Co.

B

Baash-Ross Tool Co.
Badger, E. B., & Sons Co.
Badgett Steam Lubricator Co.
Baker Oil Tools, Inc.....135
Barber-Greene Co.
Baroid Sales Co.
Barnes Mfg. Co., The
Barnickel, Wm. S., & Co.
Barnsdall Refineries, Inc.
Barrett Co., The
Bart Products Co.
Beaumont Iron Works Co., The
Benson & Henderson Pipe Line Construction Co.
Bethlehem Steel Co.
Biggs Boiler Works, The
Bigelow-Liptak Corp.
Bignall & Keeler Machine Works..... 6
Blackor Co.
Black, Sivalls & Bryson, Inc.
Bradford Motor Works, Inc.
Braun, C. F., & Co.
Brewster Co., Inc., The
Bridgeport Machine Co.
Bristol Co., The
Broderick & Bascom Rope Co.....131
Broderick Co., The
Brown Instrument Co..... 7
Buckeye Traction Ditcher Co.
Buda Engine Service Co. of Tulsa
Burford Oil Co.
Butler Mfg. Co.
Byers, A. M., Co..... 3
Byers Machine Co.
Byron Jackson Co.

C

California Talc Co.
Cameron Iron Works, Inc.
Campbell Co., J. A..... 96
Carbondale Machine Co.
Carey, Philip, Co., The
Carterpillar Tractor Co.
Chain Belt Co..... 62
Champion & Barber, Inc.
Chaplin-Fulton Mfg. Co., The 131
Chapman Valve Mfg. Co., The
Chicago Bridge & Iron Works 43
Chicago Pneumatic Tool Co.
Cincinnati Advertising Products Co., The
Clark Brothers Co..... 60-61
Classified wants 108-109-111
Cleveland Trencher Co., The
Colona Mfg. Co.
Colorado School of Mines
Columbian Rope Co.
Columbian Steel Tank.....
Columbus Forge & Iron Co., The..... 136
Consolidated Ashcroft Hancock Co., Inc.
Continental Equipment Co.
Continental Supply Co., The..... 41
Cooper-Bessemer Corp., The..... 72-73
Corona Products, Inc.
Crane Co.
Crowe Laboratory Appliances

D

D. & B. Pump & Supply Co.
Darling Valve & Mfg. Co..... 10
Dart, E. M., Mfg. Co.
Davey Compressor Co.
Davis Regulator Co.
Dayton-Dowd
Dearborn Chemical Co.
Deep Rock Oil Corp.
Dehydro, Inc.
DeSoto Foundry & Machine Co.
Devine Mfg. Co., Inc., J. P.

D

Dixon Crucible Co., Joseph
Dodge Brothers Corp.
Doheny Stone Drill Co.
Donovan Boiler Works, Inc.
Drane-Humphrey Co., Inc.
Dresser, S. R., Mfg. Co..... 29
Driftmeter, Inc.
Dunn Brothers
Du Pont de Nemours & Co., Inc., E. I.
Duriron Co., Inc., The

E

Eagle-Picher Lead Co.
East Texas Refining Co.
Economy Pump & Oil Tool Co., The
Edeleanu Co., Ltd.
Edward Valve & Mfg. Co., Inc.
Elliott Mfg. Co.
Electric Machinery Mfg. Co.
Empire Oil & Refining Co.
Ethyl Gasoline Corp.
Exchange Banks of Tulsa

F

Falk Corp., The
Fenwick-Reddaway Mfg. Co.....136
Fisher Governor Co.
Foote Bros. Gear & Machine Co.
Ford, Bacon & Davis, Inc.
Fort Worth Chamber of Commerce
Foster Wheeler Corp.
Foxboro Co., Inc., The
Franklin Valveless Engine Co.
Freeman Mfg. Co. 136
Frick-Reid Supply Corp.

G

Gardner-Denver Co.
Garlock Packing Co., The
Gaso Pump & Burner Mfg. Co.
.....Inside Back Cover
Gates Rubber Co.
General American Tank Car Corp.
General Electric Co.
General Mfg. Co., The
Globe Oil Tools Co..... 69
Goodrich, B. F., Rubber Co., The
Goodyear Tire & Rubber Co..... 37
Goslin-Birmingham Mfg. Co.
Gott, H. P., Mfg. Co., Inc.
Goulds Pumps, Inc..... 95
Granger Indicator Co.
Granite City Steel Co.
Grant Oil Tool Co.
Gray Processes Corp., The..... 14
Grinnell Co., Inc.....8-9
Griscom-Russell Co., The
Guiberson Corp., The..... 87
Gulf Refining Co..... 82

H

Halliburton Oil Well Cementing Co.
Hamer Oil Tool Co., Ltd.
Hanlon Buchanan, Inc.
Hanlon-Waters, Inc.
Harrisburg Pipe & Pipe Bending Co.
Haynes Stellite Co.
Hazard Wire Rope Co..... 13
Headley Emulsified Products Co.....104
Hedges-Walsh-Weidner Co., The
Heeter, Sons & Co., Inc., C. M. 134
Hercules Motors Corp.
Hercules Supply Co.
Hercules Tool Co.
Hewitt-Gutta Percha Co.
Heydrick Mapping Co.....143
Highland Iron & Steel Co., The
Hill, Hubbell & Co.
Hope Engineering Co.
Hopper Machine Works, Inc.
Hough, Charles N., Mfg. Co., The
Hughes Tool Co.....Back Cover
Humble Oil & Refining Co.

I

Imperial Belting Co.
Imperial Royalties Co.
Improved Steel Gas Engine Head Co.
Industrial Brownhoist Corp.
Industrial Dallas, Inc.
Ingersoll-Rand Co.
International Derrick & Equipment Co., The.....Front Cover
International Harvester Co. of America
International Nickel Co., Inc., The
International Supply Co.

J

Jackson Co., Byron
Jackson Engineering Corp.
Jarecki Mfg. Co.
Jenkins Engineering Co.
Jenkins Bros. 35
Jerguson Gage & Valve Co.....143
Johns-Manville 39
Jones & Laughlin Steel Corp.

K

Kellogg, M. W., Co., The.....143
Kelly, John Eoghan
Kennedy Valve Co., The.....137
Kerotest Mfg. Co.
Key Boiler Equipment Co.
Kingham Trailer Co., Inc.
Kirk-Morrow Iron Works, Inc.
Kohler Co.
Koppers Co., The

L

Landis Machine Co., Inc.
Larkin Packer Co.
Layne & Bowler Co.
Leader Iron Works, Inc..... 131
Lemona, Inc., Henry L.
Leonard Construction Co.
Leschen, A., & Sons Rope Co.
Limbert & Co., George B. 143
Lincoln Electric Co.
Linde Air Products Co..... 2
Link-Belt Co.
Littleford Bros. Co..... 101
Longyear, E. J., Co.
Lucey Products Corp.
Ludlow Valve Mfg. Co.
Lufkin Foundry & Machine Co., The
Lufkin Rule Co.
Lummus, The, Co.
Lunkenheimer Co., The

Mc

McAlear Mfg. Co., The
McClintic-Marshall Co.
McCord Radiator & Mfg. Co..... 84
McEverlast, Inc.
McEvoy, J. H., & Co.
McIntosh & Seymour Corp.
McKee, Arthur G., & Co.

M

MacClatchie Mfg. Co.
Magnolia Petroleum Co.
Mair, D. S., Machinery Corp.
Maloney Tank Mfg. Co.
Marion Machine Foundry & Supply Co.
Marsh Gauge Pole Co.
Martin-Decker Corp.
Mason Regulator Co.
Merco Nordstrom Valve Co.
Metric Metal Works
Michigan Valve & Foundry Co.
Mid-Continent Map Co.
Midwest Piping & Supply Co., Inc.
Miller Sand Pump Co.
Mine Safety Appliance Co.
Moon Mfg. Co., The
Moore, Lee C., & Co., Inc..... 80-81
Moorlane Co., Inc.
Morris, I. P., & De La Vergne, Inc.
Moser Manufacturing Co. 104
Muller Co., The Jno.
Multiplex Display Fixture Co.
Munn & Co. 143
Murray Tool & Supply Co.

N

National Airoil Burner Co. 134
National Equipment Corp. 77
National Lead Co. 45
National Supply Co.
National Tank Co.
National Tank Seal Co.
National Transit Pump & Machine Co.; 27
National Tube Co.
Naylor Pipe Co. 67
Neilan Co., Ltd.
Nitrose Co., The
North American Car Corp. 143
Northwest Engineering Co.

O

Oakite Products, Inc. 135
O'Brien Steel Construction Co.
Ohio Injector Co., The
Oil Conservation Engineering Co., The
Oil Countries Specialties Mfg. Co., The
Oil and Gas Journal, The 133
Oil Well Improvements Co.
Oil Well Supply Co. 59
Oklahoma Contracting Co.
Oklahoma Gas & Electric Co.
Oliver United Filters, Inc.
Ottumwa Iron Works 132
Oxweld Acetylene Co.

P

Page Fence Assn. 86
Page Steel & Wire Co.
Parkersburg Machine Co. 101
Parkersburg Rig & Reel Co., The 15
Patch, W. N.
Patrick, R. S.
Patterson-Ballagh Corp.
Penberthy Injector Co. 31
Petroleum Engineering, Inc.
Petroleum Equipment Co.
Petroleum Iron Works Co.
Pickering Governor Co., The
Pittsburgh-Des Moines Steel Co.
Pittsburgh Equitable Meter Co. 75
Pittsburgh Screw & Bolt Corp.
Pittsburgh Steel Products Co. 12
Plymouth Cordage Co.
Pomona Pump Co.
Powell, William, Co.
Power Piping Co.
Prescott Co., The
Pressed Steel Car Co.
Prest-O-Lite Co., Inc., The
Primrose Petroleum Co.
Public Service Co.
Pure Oil Co., The
Pyle-National Co., The

R

Reading Iron Co.
Reading Steel Casting Co., Inc.

R

Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Reo Motor Car Co.
Republic Steel Corp.
Republic Supply Co. 90
Robinson Orifice Fittings Co. 137
Ross-Meehan Foundries Co. 136

S

St. Louis Cordage Mills.....130
Shaffer Tool Works
Sheldon Machinery Corp.
Sherwin-Williams Co.
Sinclair Refining Co.
Skelly Oil Co.
Smith, A. O., Corp. 4-5
Smith Co., E. M.
Smith Separator Co.
Smooth-On Mfg. Co. 135
South Chester Tube Co.
Southern Cornice Works
Southwestern Construction Corp.
Southwestern Engineering Corp.
Sowers Manufacturing Co.
Spang & Co.
Spang, Chalfant & Co., Inc. 129
Spengler Tool Co.
Sperry-Sun Well Surveying Co.
Stacey Engineering Co., The 136
Star Drilling Machine Co.
Steiner, George
Sterling Steel Casting Co.
Stockham Pipe & Fittings Co.
Stoody Co.
Stork Engineering Co.
Strong Oil Tool Co.
Sullivan Machinery Co.
Sun Shipbuilding & Drydock Co.
Superheater Co., The 47
Sureshot Torpedo Co.

T

Tagliabue, C. J., Mfg. Co.
Taubman Supply Corp.
Taylor Forge & Pipe Works
Taylor Instrument Companies
Technical Products, Inc.
Terry Steam Turbine Co., The
Texas Electric Service
Texas Steel Co. 134
Thompson, J. D., Jr.
Timken Roller Bearing Co., The 71
Titusville Iron Works Co.
Toledo Pipe Threading Machine Co., The 105
Trackson Co.
Tractor Truck Equipment Co.
Tretolite Co.
Trimont Mfg. Co.
Truscon Steel Co.
Tube Turns, Inc.
Tulsa Boiler & Machinery Co.
Tulsa Chamber of Commerce
Tulsa Sheet Metal Co.
Twin Disc Clutch Co.
Tyler Chamber of Commerce

U

Union Carbide & Carbon Corp. 2
U. S. Electric Mfg. Co.
Union Wire Rope Co. 88
United Engineers & Constructors 78
Universal Oil Products Co. 33
Utility Trailer Mfg. Co.

V

Vacuum Oil Co. 97
Vellumoid Co., The
Vez Co., The
Vickers Machine Co.
Victaulic Co. of America
Victor Balata & Textile Belting Co.
Vogel, Felix A.
Vogt, Henry, Machine Co.
Von Gemmingen, W. G. 143

W

Wagner Electric Corp.
Wailes, Dove-Hermiston Corp.
Wall Rope Works, Inc.
Walworth Co. 1
Warren Petroleum Co.
Waukesha Motor Co.
Westco Pump Corp. 100
Westcott Valve Co.
Western Gas Construction Co., The
Westinghouse Electric & Mfg. Co., The 64-65
Whealton & Townsend, Inc., Ltd.
White Co., The
Wickwire Spencer Steel Co.
Wico Electric Co.
Williams Brothers, Inc.
Williamsport Wire Rope Co.
Wilson-Snyder Mfg. Corp.
Wilson Welder & Metals Co., The
Winkler-Koch Engineering Co., The
W. K. M. Co., Inc.
Worthington Pump & Machy. Corp.
Wright Machine Co., Inc., The
Wright Manufacturing Co.
Wyatt Metal & Boiler Works

Y

Yale & Towne Mfg. Co.
Young Engine Corp.
Youngstown Sheet & Tube Co., The 11

Z

Zingery Oil Map Co.

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Table of Contents

SPECIAL ARTICLES

Conditions Assume Brighter Aspect 19
By James McIntyre
East Texas Field will be curtailed to maximum of 150,000 bbls. per day. Oklahoma City crude demand increases.

St. Louis A.PI. Meeting Encouraging 21
By C. O. Willson
Industry assured demand will equal last year. Confidence in program.

New Gasoline and Lub Specifications 21
By Charles E. Kern

A.P.I. Refinery Estimate 22
Demand for gasoline will not differ much from past year.

Would Hold Allowable to Present Total 23
Oil States Advisory Committee advises against increase.

Refining Value of East Texas Crudes 24
By W. T. Ziegenhain
Lower freight rates and pipe lines make cheap crude available.

Well Records Are of Major Importance 25
By L. G. E. Bignell
Systematic study of operating conditions of value to owners.

Vapor Lock a Problem of Motor Design 26
By Robert C. Conine
Manufacturers could simplify refinery technologists' troubles.

Guide for Next Six Months (Editorial) 28

"Unrefinable" Oils as Cracking Stock 30
By Gustav Egloff, E. F. Nelson and Paul Truesdell
Light and heavy crudes on West Coast good charging stocks.

East Texas Field Will Be Curtailed 32
Starting with 130,000 bbls., production will be permitted to increase to 150,000 bbls. Humble's new prices and tariffs.

California Fuel Oil Market Brighter 51
By L. P. Stockman
In contrast to markets for light refinable crude and gasoline.

Atlantic Refining Co. to Lay Gasoline Line 52

Pipe Line Construction News 52

Engineering Report on Hobbs Pool 53
By L. G. E. Bignell

Gasoline Tax Invites Gross Cheating 53
By Thomas F. Smiley
If motorists handed money to collector law would be repealed.

Routine Testing of Contact Clays 56
By E. W. Zublin
Complete neutralization can be effected without caustic.

Value of Cost Accounting in Field Operations 56
By Francis W. Lake

Recovery Must Come Through Co-operative Effort 58

Field Problems and Their Solution 76
Edited by Thomas F. Smiley

Field and Plant Men Before Journal's Cameras 83

Long Search for Oil in Smith County 106
By Special Correspondent
Discovery on west side preceded by years of exploration.

Wrong Idea of Proration 112

Difficult Pipe Line Replacement Job 115
By Neil Williams

Increased Demand Met at Oklahoma City 125

FIELD OPERATIONS

Late Fields 32

Oklahoma 34
By W. A. Spinney

Kansas 36
By W. A. Spinney

North Louisiana-Arkansas 38
By J. R. Crumpton

Southwest Texas 40
By B. D. Stevenson

Gulf Coast 42
By Neil Williams

Rocky Mountain Area 44
By Tolbert R. Ingram

Canada 44
By Victor Lauriston

California 46
By L. P. Stockman

Michigan 48
By Paul A. Elliott

East Texas 49
By L. E. Bredberg

West Texas, North Texas and Panhandle 50
By L. E. Bredberg

Eastern Fields 59
By Staff Correspondent

Central West 63
By George A. Whitney

Kentucky 63
By George A. Whitney

Corning Gas Field 107

REFINING AND MARKETING

Basis for Market Advance Strengthens 20
By W. T. Ziegenhain
Humble's plan to control East Texas reviewed with optimism despite posting of lower crude prices in other fields.

Technical Questions Answered 79
By C. K. Francis, Ph.D.

Little Change in East Coast Market 110
By A. E. Mockler

Introduction of New Grade Gasoline at Chicago 111
By Robert C. Conine

Brief Items for Petroleum Refiners 113

Natural Gasoline Manufacture 114

Refinery and Crude Prices 116-117

Tank Wagon Quotations 118

Of Interest to Sales Departments 119

DEPARTMENTS OF GENERAL INTEREST

The Advertisers' Index 17

Personal Paragraphs About Oil Men 66

Oil Industry Equipment and Supplies 68-70

Natural Gas Industry Developments 74

Classified Want Advertisements 108-109-112

Oil Securities Market 120-121

Exports of Petroleum and Products 136

Detailed Field Operations in March 138

Crude Petroleum Statistics 144

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Refinery Section Starts on Page 110

Conditions Assume Brighter Aspect

Highest production in 1930, week ending Feb. 22, average daily output 2,699,096 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

East Texas Field Will Be Curtailed to Maximum of 150,000 Bbls. a Day. Oklahoma City Crude Demand Increases

By James McIntyre

Lowest daily average crude oil production in the United States during 1930 was for week ending Dec. 27 with average output of 2,144,074 bbls.

Notwithstanding the tremendous increase in the average daily production of crude oil in the United States in the past week, conditions have assumed a brighter aspect.

The particular faction of East Texans that has been making the strongest fight against the proration of production in the big East Texas Field has agreed to a sixty-day truce and its leaders are willing to approve of proration based on a higher allowable figure than that made by the Texas Railroad Commission, which was 90,000 barrels per day. The agreement calls for an allowable of 130,000 barrels, which will be increased to 150,000 barrels by degrees. The Humble Oil & Refining Co. has joined the Magnolia Petroleum Co. in posting prices in the East Texas Field on a level with the schedule that prevails in Kansas, Oklahoma, North Louisiana, Arkansas and East Central Texas. The Humble company at the same time announced a reduction in pipe line tariffs to as nearly as possible equalize the costs of all Texas crudes at the Gulf seaboard.

It is now believed possible to bring about a sane development of the East Texas fields and to produce wells already in on a level with demand.

The East Texas Field is acknowledged to be the largest single producing area in the world, occupying as it does about 100,000 acres. Most of the adherents to the policy of unrestrained production from that field have come to see the folly of such a policy in a field of that size and with wells of very large initial output. With the big drilling campaign now on it would be only a matter of a short time until necessity forced the shutting in of producing wells, as the pipe lines could not handle the volume of oil the field could produce.

The large increase in Oklahoma should be followed next week or the week following by a very considerable decline as the work of taking proration tests will be over, and the wells again pinched in or shut in in accordance with Corporation Commission orders. The Oklahoma City Field will be permitted to produce from 40,000 to 50,000 barrels per day above the old allowable figure because of an increase in the demand for oil from that field.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for week ended April 18 and a comparison with the previous week follows:

	April 18	April 11
Oklahoma—		
Oklahoma City	192,690	163,635
Seminole-St. Louis	155,111	112,890
Remainder of State	236,674	236,440
Total Oklahoma	584,475	512,965
West Texas—		
Hendricks	45,881	46,552
Yates	85,750	95,659
Remainder	107,573	103,157
Total West Texas	239,204	245,368
North Louisiana	39,020	38,770
Arkansas	46,995	47,170
North Central Texas	81,968	80,330
Texas Panhandle	55,670	49,924
East Central Texas	280,101	242,808
Kansas	109,750	109,160
Total Mid-Continent area	1,437,183	1,326,495
Gulf Coast	178,698	175,016
Southwest Texas	71,146	68,611
Eastern	111,000	110,000
Rocky Mountain area	95,904	93,530
California—		
Santa Fe Springs	71,750	70,750
Long Beach	89,000	89,500
Playa Del Rey	28,750	28,250
Elwood	34,250	34,500
Ventura Avenue	44,750	43,250
Kettleman Hills	26,000	25,500
Remainder of State	230,000	233,250
Total California	524,500	525,000
Total United States	2,418,431	2,298,652

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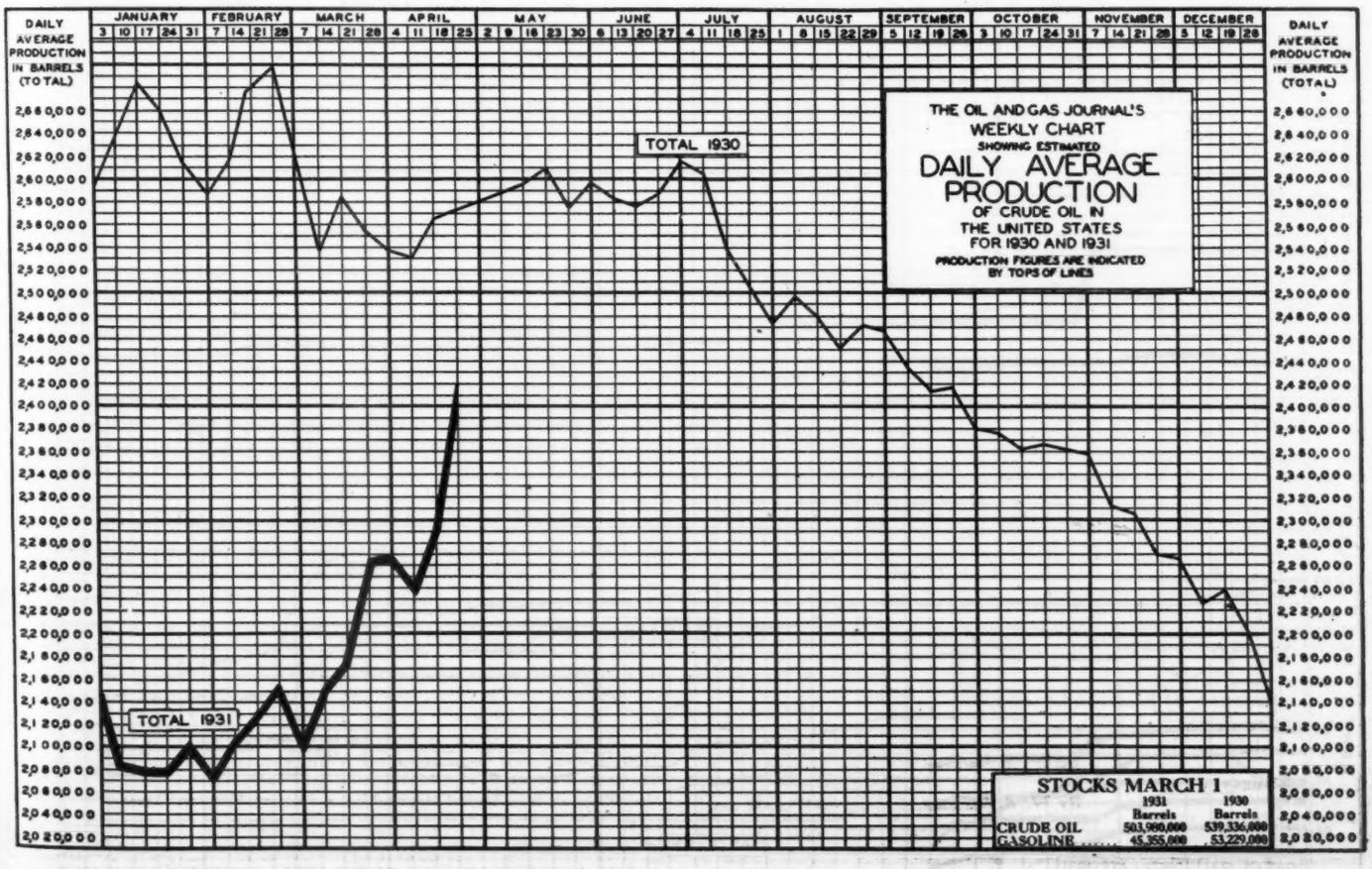


Basis for Market Advance Strengthens

Humble's Plan to Control East Texas Reviewed With Optimism Despite Posting of Lower Crude Prices in Other Fields

By W. T. Ziegenhain

Although refined oil prices sagged to new lows as the past week of slow sales drew to a close new hopes arose when the Humble Oil & Refining Co. announced its plan for stabilizing crude prices through a plan by which East Texas may be brought under control. By posting a schedule of prices in the East Texas Field considerably higher than the prices at which the oil is now moving and at the same time reducing the pipe line tariff to the Gulf Coast from other areas approximately 20 per cent, the Humble is attempting to equalize the delivered cost to the Gulf Coast of all crudes produced in Texas. However, as part of the plan, crudes produced in other Texas fields were slightly reduced and this fact acted as the only disturbing step in the new program, so far as the refined oil market in Oklahoma is concerned.

At this early date it is not possible to determine the likely trend of the market over the immediate future as opposing factors tend to become equalized but the new plan brings the control of production in East Texas to a clean cut issue and if producers take advantage of it the stabilization of the Mid-Continent market will have moved considerably forward. If the offer is ignored, still lower Mid-Continent crude prices seem imminent and stabilization of the market could not be expected until East Texas has run its course.

Market Prices

Oklahoma refiners adhered to a lesser price range on their gasoline quotations during the past week, which in itself indicated the market might be expected to move forward at the first bit of encouraging news. However, this range moved downward to include a slight recession and less than a normal volume of material was moved. Kerosene also moved slowly and was quoted below the general market of a week ago. Natural gasoline prices moved to a new low for all time and the market appeared to be in such a condition that the material could not have been moved at any price. This was the result of the larger integrated companies offering to sell a part of their production instead of buying additional quantities for their own refinery needs as is done in normal times. Lubricants and wax sold in quantities more nearly normal and there were no price changes. Gas oil and fuel oils were particularly weak.

Gasoline

The 3-cent and 3⅛-cent U. S. Motor gasoline that appeared in small quantities from time to time during the past two weeks for resale did not appear in the past week. This grade was traded at a price ranging between 3¼ and 3¾ cents, the larger refiners holding to 3½ and 3¾ cents. The 400 endpoint and the 375 endpoint grades continued to be offered in large quantities and prices on these were fractionally lower.

Many believe that the present lull in gasoline demand is being brought about in part, through the announcement by the Standard Oil Co. (Indiana) that it will distribute a third grade of gasoline. Since then other refiners have decided to offer a third grade and independent marketers are apparently undecided on what course they shall take. As a result they are holding off all purchases.

Natural Gasoline

The AA grade of natural gasoline was freely offered at 1⅝ cents which is about the posted field price for high gravity Mid-Continent crude. Encouragement was offered for the future of the market as it was learned that the Gypsy, Carter and Sinclair are expected to soon withdraw from offering a part of their production on the open market and in that case there will not be an excess of production.

Kerosene and Distillates

As the demand for all grades of kerosene shows a decline, slight temporary price concessions appear, first on the part of one refiner and then another, until each has cleaned up what he considers excess stocks This practice has permitted the general market to move to a lower level, although several refiners who are making a low sulphur, low flash product find no trouble in moving production at the top of the price range.

The demand for furnace oils and low flash distillates has shown the expected seasonal decline and 2 to 2¼ cents is the price range at which most of the trading is done. This, however, is considered a

(Continued on Page 126)

REFINED MARKET BAROMETER

The willingness shown by operators in the East Texas area to enter into a proration agreement regarding the output of that prolific field was viewed as a most constructive turn among refiners and marketers in all sections and hope of at least stabilizing prices at their present low level seemed shortly to be realized. All products in all areas continued to be freely offered at last week's price level and new lows were quoted on natural gasoline, gas oil and fuel oil in the Mid-Continent and California. The East Coast market appeared to be marking time and except for a slight recession in the high of the domestic quotation for gasoline there were no important changes elsewhere.

Mid-Continent—Gasoline quotations moved to a narrower range and less distress material was offered at the close of the week. Natural gasolines struck a new low for all times. Gas oil and fuel oils were slightly weaker and the prices on the higher gravities were reduced. Lubricants and wax remain unchanged.

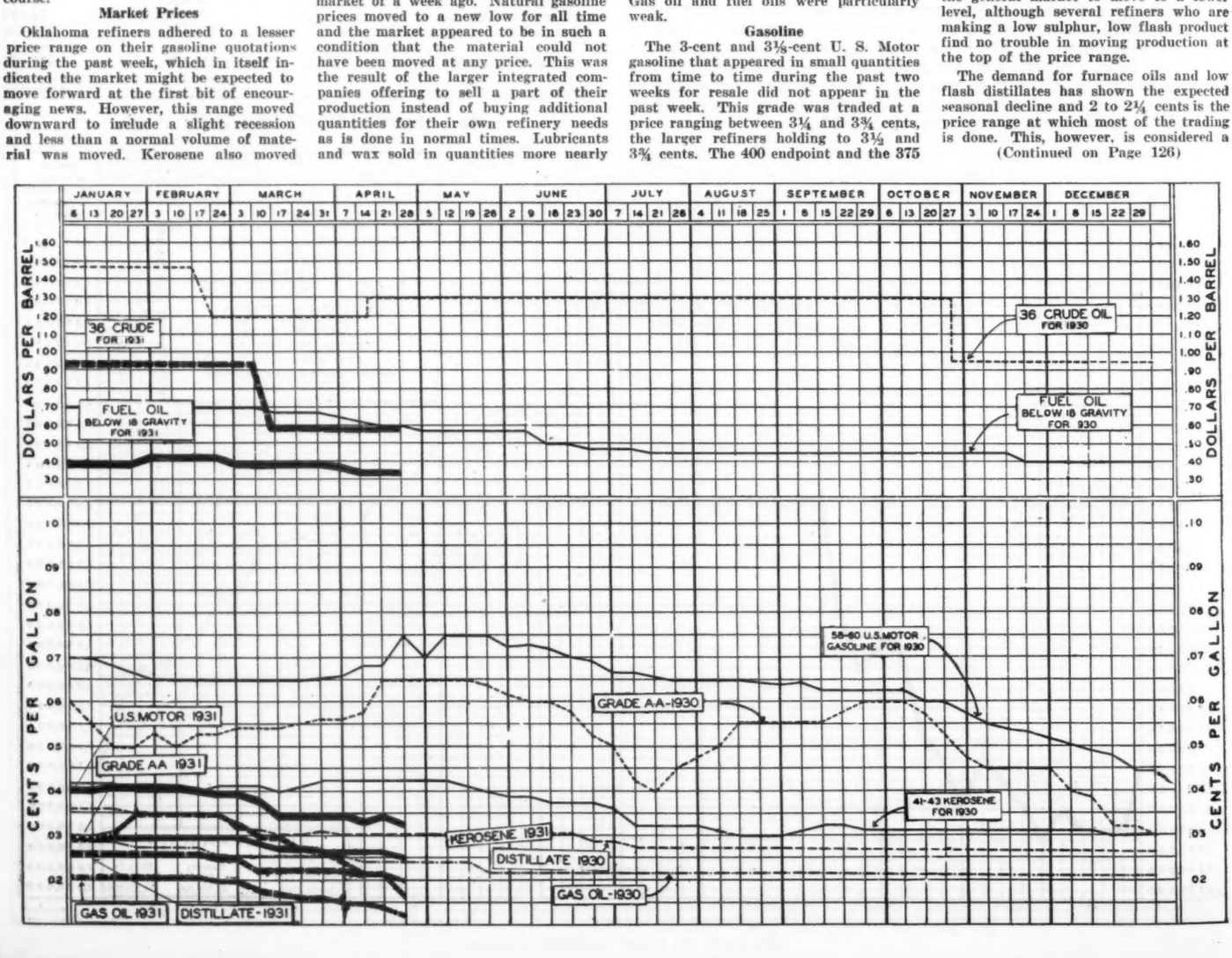
Eastern Seaboard—No important price changes resulted in the week. Wax prices were slightly lowered.

California—Lower refinery and natural gasoline prices were posted early in the week and the future trend of the market apparently depends upon developments in other Coast refining areas.

Pennsylvania—Slightly lower prices were posted on several grades of neutrals and steam refined stocks and the entire market moved very slowly.

Gulf Coast—The market remained quiet as the past week's prices prevailed.

Chicago—Gasoline sales were below normal in quantity and there was an apparent willingness to shade prices to get what business developed. This lull was the result of marketers delaying purchases pending developments in regard to other major companies installing a third grade of gasoline at their stations, in following the lead of the Standard Oil Co. of Indiana whose plan was announced a week ago. Fuel oils and gas oils were generally quoted at a slight reduction under a week ago.



St. Louis A.P.I. Meeting Encouraging

Industry Assured Demand Will Equal That of Last Year. Confidence in Carrying Out Next Six Months' Program

By C. O. Willson

ST. LOUIS, Mo., Apr. 16.—The present allowable production in the United States should be continued for the present, according to a report unanimously adopted by members of the Oil States Advisory Committee who have been in session here since Tuesday.

In a formal recommendation to the governors of the several oil-producing states, the committee said that a continuance of the present allowable production of the states "will best promote conservation of the natural resources of our states and will best prevent waste, preserve taxable values and do such other things which are for the direct benefit of our states."

This action was taken despite the fact that two other committees which have made reports here in connection with the semiannual meeting of the refining division of the American Petroleum Institute, estimated that there would be a substantial increase in the demand for crude oil for the period starting April 1 and ending September 30. These committees, which worked separately, were the Voluntary Committee on Economics of the Federal Conservation Board and the Committee on Economics of the American Petroleum Institute. The report of the Federal Conservation committee was published in the April 16 (page 23) issue of The Oil and Gas Journal.

The Oil States Advisory Committee made the recommendation to governors of their respective states after making a detailed study of the other two reports. The Federal Conservation Committee, while not making any recommendations as to the quantity of the crude oil which should be produced in the United States, estimated a domestic demand, disregarding imports, of 2,521,497 bbls. per day for the six months' period starting April 1 and ending September 30.

This committee has estimated a daily average domestic crude oil requirement of 2,521,497 bbls. divided as follows: Texas, 888,749 bbls.; Oklahoma, 619,344 bbls.; California, 528,000 bbls.; and all others, 485,404 bbls. Both reports provided for a gradual increase starting in April and reaching a maximum figure in August.

The A.P.I. committee on refinery statistics and economics estimated crude runs needed, daily average, at 2,568,000 bbls.

If the recommendations of the Oil States Advisory Committee are adopted by the individual states the following daily allowable production will be continued: Texas, 714,000 bbls.; Oklahoma, 550,000 bbls.; Kansas, 110,000 bbls.; California, 500,000 bbls.; Arkansas, 50,000 bbls.; Louisiana, 65,000 bbls.; New Mexico, 40,000 bbls.; Eastern States, 110,000 bbls.; Rocky Mountain States, 60,000 bbls.; total (United States) 2,199,000 bbls. The figure of 550,000 bbls. for Oklahoma is based on a probable increase from 525,000 bbls. daily if the market demand shown in proposals now pending before the Oklahoma Corporation Commission to increase the Oklahoma City Field from 125,000 to 150,000 bbls. daily should justify the increase.

The proposal of the Oil States Advisory Committee to continue present production is frankly what Cicero Murray, chairman of the committee termed "an attempt to create an economic condition which will bring about a fair price for crude oil and refinery products."

Withdraw From Storage

In regard to the reports of the Federal Conservation and the A.P.I. committees the Oil States Committee said: "Our committee is of the unanimous opinion that no sufficient reasons on inducements have been shown in the reports of either of the reports of the committees to justify our states in making any increase in oil allowable production during the six months' period ending October 1, 1931, and that it will be for the best interest of all our states, represented, and we so recommend to our governors and to the various conservation authorities of these states that there be no increase of allowables of production of crude oil within such period of time."

To take care of requirements in excess of current production the committee recommends that withdrawals from storage be made "or if the owners of such stored crude oil do not desire to so use said stored oil, then that sufficient inducements should be held out to the various states interested to justify this committee in recommending an increase in production to meet such demand."

Importers to Co-operate

In connection with its recommendations to the governors, the Oil States Committee stated that importers had agreed to curtail their imports of crude oil and other products at least 25 per cent and also reduce their actual production of crude oil in foreign countries.

These import agreements were made upon a three-month basis initially commencing April 1, 1931, and contemplate such 25 per cent reductions as compared with the same periods in 1930. The committee in regard to these imports agreements said the continuance of present allowables in United States should be contingent on the 25 per cent reduction in imports being continued.

More Favorable Outlook

The findings of the Oil States Advisory Committee were presented at a meeting of the refinery division of the American Petroleum Institute by Chairman Murray and Robert R. Penn, vice president of the American Petroleum Institute and a member of the committee. Previously the reports of the American Petroleum Institute and Federal Conservation committees had been presented. R. C. Holmes, president of The Texas Corporation and vice president of the American Petroleum Institute in charge of the refining division, presided. Mr. Holmes as chairman of the committee on refinery statistics and economics presented the report covering the expected supply and demand for petroleum over the next six months. E. B. Swanson of the Bureau of Foreign and Domestic Commerce, as chairman, discussed the Government's report.

The several reports and discussions proved highly encouraging to a large number of executives in attendance at the two-day meeting of the refining division and the American Petroleum Institute board of directors. Coming at a time when the markets for both crude oil and refined products are unsatisfactory the reports assured a demand practically equal to that of the same period last year despite depressed conditions in the country generally.

The reports of the American Petroleum Institute and the Federal Oil Conservation Board regarding the demand over the next six months were similar in all the essential data. John D. Gill, of the Atlantic Refining Co., chairman of the statistical subcommittee which prepared the A.P.I. report, gave an interesting discussion of what had taken place over the six months' period ending April 1 and the probable trend in demand over the next six months.

The recommendations of this committee in regard to operations made at the A.P.I. meeting at Chicago in November were carried out in actual operations in a remarkable manner showing that the industry is willing to carry out a plan based on a close study of probable supply and demand once its provisions are made known.

Mr. Gill's report showed that as a unit, refiners had run crude oil to their stills and produced gasoline in line with the recommendations for the period ending April 1. The committee's estimate as to the domestic demand for that period was within 1 per cent accurate, an achievement which was not expected due to general conditions that made it impossible to use the basis rules of the past in estimating requirements.

The fact that exports did not hold up as well as expected was responsible for the failure to reach the objective of 40,000,000 bbls. of gasoline stocks at refineries on April 1. The committee in December estimated that gasoline exports would show an increase of .4 per cent over the same period last year. Actually, a decline of approximately 19 per cent was shown. Due largely to this development, gasoline stocks on April 1 of this year were approximately 48,000,000 bbls.

No Export Recovery

In this connection, neither the Federal Conservation nor the A.P.I. committees' reports held out any encouragement as to a recovery in export outlets over the next six months. In estimating a total demand of 252,000,000 bbls. of gasoline for the six months' period starting April 1, the A.P.I. committee is expecting a decrease of 17 per cent in exports when compared with the same period last year. The exports for the six months are placed at 27,127,000 bbls. which compares with 32,672,000 bbls. for the same period last year. The domestic demand is estimated at 225,000,000 bbls., an increase of 3.5 per cent over last year.

Both reports recognize the fact that the production of cracked gasoline will continue to increase and this will tend to reduce the quantity of straightrun gasoline and crude oil required to supply the available demand. Regarding this situation the A.P.I. report states: "The probable composition of the total refinery output between its three components, straightrun, cracked and natural gasoline, has been influenced by the change in the characteristics of the gasoline demanded by consumers. For example, while the needed refinery output during the coming period is 980,000 bbls. above that of the actual refinery output of the corresponding period of last year, it is expected that natural gasoline will supply 921,000 bbls. less, straightrun gasoline 2,075,000 bbls. less and cracked gasoline 3,976,000 bbls. more." These figures are for the six months' period ending October 1, 1931.

Some increase in the demand for fuel oil and gas oil is predicted for the six months' period. The A.P.I. report states: "Despite the low level of business activity, the outlook for the demand for gas oil and fuel oil is slightly in excess of that experienced in the corresponding period a year ago. Nevertheless, the refinery production indicated will be sufficient to care for demand and stocks on October 1, 1931, will be practically equal to those existing on the same date of the previous year."

In regard to refinery operations, the A.P.I. statistical report outlines the probable demand for gasoline based on the several refining areas together with data on crude oil runs to stills and gasoline production including imports. Under the plan suggested by the committee gasoline stocks at refineries will be reduced to 27,184,000 bbls. by September 30, 1931. The report provides a steady decline in stocks starting at the end of April. The

(Continued on Page 126)

APPROVES NEW MOTOR GASOLINE AND LUB OIL SPECIFICATIONS

WASHINGTON, D. C., Apr. 21.—The Federal Specifications Board today approved a revision in the specifications on U. S. Motor gasoline and on class D lubricating oils. The new specifications which will be included on all purchases by the Government are as follows:

United States Government Motor gasoline shall be of but one grade.

General Requirements

D-1. United States Government Motor gasoline shall be volatile hydrocarbon fuel free from water and suspended matter, and shall be suitable for use as fuel in internal combustion engines.

F-2. Sampling—Unless otherwise specified, samples shall be taken according to the procedures described in Part 3 of Federal Specification VV-L-791 (No. 2-D) (Bureau of Mines Technical Paper 323-B) or latest revision thereof.

F-3. Inspection and Tests — All tests shall be made as of the point of delivery according to the methods for testing contained in Part 2 of Federal Specification VV-L-791 (No. 2-D) (Bureau of Mines Technical Paper 323-B) or latest revision thereof.

When Reid vapor pressure measurements are made at the refinery or bulk station an additional 1 pound per square inch in vapor pressure shall be allowed for losses in transit.

F-4. Corrosion Test—Method 530.22. A clean copper strip shall not show more than extremely slight discoloration when submerged in the gasoline for 3 hours at 122° F.

F-5. Distillation Range — Method 100.14. When the thermometer reads 75° C. (167° F.) not less than 10 per cent shall be evaporated.

When the thermometer reads 140° C. (284° F.) not less than 50 per cent shall be evaporated.

When the thermometer reads 200° C. (392° F.) not less than 90 per cent shall be evaporated.

The residue shall not exceed 2 per cent.

Per cent evaporated shall be found by adding the distillation loss to the amount collected in the receiver at each specification temperature.

The Government reserves the right to reject material during the months of December, January, February and March in those localities where the normal mean minimum temperature during the month of January is less than 27° F. if when the thermometer reads 65° C. (149° F.) less than 10 per cent shall be evaporated.

F-6. Sulphur — Method 520.11. Sulphur shall not exceed 0.10 per cent.

F-7. Vapor Pressure — Method. The vapor pressure at 37.8° C. (100° F.) shall not exceed 12 pounds per square inch at the normal barometric pressure at the point of delivery.

The Government reserved the right to reject material (A) during the months of December, January, February and March in those localities where the normal mean minimum temperature during the month of January is greater than 27° F. if the vapor pressure at 37.8° C. (100° F.) exceeds 10 pounds per square inch; (B) during the months of June, July, August and September if the va-

(Continued on Page 127)

A.P.I. Committee Refinery Estimate

Demand for Gasoline Will Differ but Little From Past Year. Levels of Stocks Best Criterion of Economic Operation

The report of the committee on refinery statistics and economics to the board of directors of the American Petroleum Institute follows:

The committee on refinery statistics and economics met in St. Louis on April 14 and 15, 1931, and had available for its study the report of the voluntary committee on petroleum economics of the Federal Oil Conservation Board which had been submitted to Ray Lyman Wilbur, Secretary of the Interior, on April 6, 1931. It also received and considered the findings of its own statistical subcommittee which had prepared a statement of the economic stocks of gasoline at refineries (see note Table 2), and gasoline and crude oil requirements during the period April 1 to October 1, 1931.

These two reports, each the result of weeks of study and careful consideration by competent statisticians and economists, are in substantial agreement. They indicate conclusively that a strict adherence to the maintenance of supply and demand in balance continues to be of vital importance to the industry.

Gasoline

Specifically, your attention is directed to the fact that the industry may expect a demand for gasoline approximating that which was enjoyed in the corresponding period a year ago.

While the demand on the entire period probably will differ but little from the demand a year ago, present indications point to a lesser demand during the first half and a greater demand during the last half of the period under consideration.

It is noteworthy that while a nominal increase in domestic demand is anticipated, the outlook is for a decrease in exported gasoline of from 15 to 17 per cent. However, coincident with such decline in foreign demand is the prospect of a nearly corresponding reduction in importations of gasoline and its equivalent in the crude oil.

Despite the fact that different procedures were employed in the determination of needed refinery output, it is highly significant that both committees arrive at the same conclusion, namely, 224,000,000 bbls. This compares to 223,000,000 bbls. in the corresponding period of the previous year.

The probable composition of the total refinery output between its three components, straightrun, cracked and natural gasoline, has been influenced by the change in the characteristics of the gasoline demanded by consumers. For example, while the needed refinery output during the coming period is 980,000 bbls. above that of the actual refinery output of the corresponding period of last year, it is expected that natural gasoline will supply 921,000 bbls. less, straightrun gasoline 2,075,000 bbls. less, and cracked gasoline 3,976,000 bbls. more.

Crude Oil

Obviously, the quantity of crude oil required by refineries is directly determined by the volume of straightrun gasoline necessary to be produced.

Consideration was given to the increase in the yield of straightrun gasoline from crude run to stills as it is effected by the changing character of domestic crude production and the substitution of domestic for foreign crude oil. Contrawise, the yield is affected adversely by the historically established effect of low crude oil prices making for less efficient refinery extraction of gasoline.

While the need for refinery gasoline during the coming period is 980,000 bbls. greater than was actually produced during the corresponding period of last year, the volume of crude oil required by refiners will be 9,257,000 bbls. less.

Due to the fact that the summation of the items of "Crude Used as Such" and "Exports" practically offset the importations of crude oil, it becomes apparent that the total quantity of crude oil demanded by refineries is practically identical with the total demand for domestic crude oil.

A study of the gasoline production, as indicated in Table 5 of the statistical subcommittee's report, indicates that the crude runs to stills during the early months of the period under consideration should be increased gradually. It is only during the latter half of the period that a more rapid rate of increased runs will be warranted to meet the expected increase in gasoline demand, the average for the entire period being 2,565,300 bbls. per day.

Especial attention is directed to the fact that from October 1, 1930, to March 1, 1931, the draft on crude oil stocks averaged 124,300 bbls. per day. It is assumed that withdrawals of crude from storage during the peak season which comes in the period under review will increase substantially over the daily average figure indicated.

Gas and Fuel Oil East of California

Despite the low level of business activity, the outlook for the demand of gas and fuel oil is slightly in excess of that experienced in the corresponding period a year ago.

Nevertheless, the refinery production indicated will be sufficient to care for demand and stocks on October 1, 1931, will be practically equal to those existing on the same date of the previous year.

Throughout the recent experience of the industry it has become increasingly evident that the levels of stocks constitute the best single criteria of economic operation.

In Table 6 of the appended report of the statistical subcommittee will be found for each refinery area for each month from April to September, 1931, inclusive, a statement of the prospective production, shipments and economic levels for gasoline stocks at refineries.

Regardless of the correctness of any series of estimates of production and shipments it is beyond disputation that a balance between supply and demand may be struck if adherence is maintained to schedules of economic stocks.

Report of Subcommittee

The report of the subcommittee on refinery statistics and economics to the committee on refinery statistics and economics, follows:

Complying with your request of February 2, 1931, your subcommittee has made a study of the prospective gasoline, crude and fuel oil situations for the period April 1, 1931, to October 1, 1931. The results of its compilations, estimates and computations are presented on the attached memoranda as follows:

Table No. 1—A general statistical summary, relating prospective demand and

(Continued on Page 54)

TABLE 1—GASOLINE DEMAND DURING APRIL 1, TO OCTOBER 1, PERIOD

(All figures are in barrels of 42 U. S. gallons)

	1930 Actual Total	1930 Actual Daily	1931 Estimated Total	1931 Estimated Daily	Per cent Increase
Domestic demand	217,508,000	1,188,600	225,000,000	1,229,000	+ 3.5
Exports	32,672,000	178,500	27,127,000	148,300	—17.0
Total demand	250,180,000	1,367,100	252,127,000	1,377,700	+ 0.8

GASOLINE

	1930 Actual Total	1930 Actual Daily	1931 Estimated Total	1931 Estimated Daily	Basis	Refer Table
Total demand	250,180,000	1,367,100	252,127,000	1,377,700	A	No. 1
Stocks April 1	55,228,000		48,000,000		B	No. 2
Stocks October 1	38,242,000		27,184,000		C	No. 2
Change in stocks (+ or —*)	—16,986,000	—92,800	—20,816,000	—113,700		
New supply	233,194,000	1,274,300	231,311,000	1,264,000	D	
Imports (deduct)	9,863,000	53,900	7,000,000	38,300	A	No. 3
Refinery output	223,331,000	1,220,400	224,311,000	1,225,700	F	No. 3
From natural (deduct)	21,921,000	119,800	21,000,000	114,700	E	No. 3
From cracked	84,485,000	461,700	88,461,000	483,400	F	No. 3
From straightrun	116,925,000	638,900	114,850,000	627,600	F	No. 3

CRUDE

Runs to stills (E of C)	374,574,000	2,046,300	339,975,000	2,131,000		
Runs to stills (Cal.) (add)	104,137,000	569,100	79,479,000	434,300	G	No. 3
Total United States	478,711,000	2,615,900	469,454,000	2,565,300	H	No. 3
Exports (add)	12,952,000	70,800	13,500,000	73,800	A	No. 4
Used as such (add)	16,072,000	87,800	17,000,000	92,900	A	No. 4
Total demand	507,735,000	2,774,500	499,954,000	2,732,000		
Imports (deduct)	33,276,000	181,800	30,000,000	163,900	A	No. 4
Demand for U. S. crude	474,459,000	2,592,700	469,954,000	2,568,100		No. 4

GAS AND FUEL OIL EAST OF CALIFORNIA

Note: Due to the abundance of fuel oil on the Pacific Coast, only the fuel oil situation east of California is presented below.

Total demand	137,255,000	750,100	142,000,000	776,000	A	No. 4
Refinery production (deduct)	130,325,000	712,200	137,466,000	751,200	I	No. 4
Production deficit	6,940,000	37,900	4,534,000	24,800		
Imports (deduct)	12,745,000	69,600	12,000,000	71,000	A	No. 4
Intercoastal receipts (deduct)	1,741,000	9,500	1,200,000	6,600	J	No. 4
Additions to storage	+7,546,000	+41,200	+9,666,000	+52,800		
Stocks April 1	28,274,000		26,500,000		B	No. 4
Stocks October 1	35,820,000		36,166,000			No. 4

A—Consensus of entire committee. B—Estimated on Bureau of Mines basis from A.P.I. weekly reports. C—Assumed stock program (working stocks). D—Total demand adjusted for change in stocks. E—Consensus of entire committee. F—Based upon expected yield from crude oil. G—Crude oil required to provide estimated gasoline requirements. H—Based upon average straightrun yield of 34.46% and cracked of 18.84%. I—Based upon average net gas and fuel oil yield of 35.25% east of California. J—Based upon composite estimate compiled from individual reports of California operators.

*Report of subcommittee on Refining Statistics and Economics.

TABLE 2—METHOD OF DETERMINING GASOLINE SHIPMENTS BY DISTRICTS, APRIL 1-OCTOBER 1, 1931, PERIOD

(All figures in barrels of 42 U. S. gallons)

	Estimated domestic demand in refinery areas (add)	Estimated shipments to other refinery areas (add)	Estimated receipts from other refinery areas (deduct)	Estimated exports (add)	Estimated net shipments by refinery areas	Estimated stocks April 1, 1931 (See Note 2 below)	Working stocks required October 1, 1931 (See Note 2 below)	Required net withdrawal from stocks (deduct)	Estimated imports (deduct)	Est. net ref'y. prod. Total Col. 5 (8+9)	Est. net ref'y. prod. Average per day
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
East Coast	66,529,000	11,015,000	34,924,000	2,450,000	46,170,000	3,850,000	4,696,000	3,954,000	6,674,000	35,542,000	194,200
Appalachian	17,956,000	2,109,000	11,711,000	550,000	8,904,000	2,050,000	888,000	1,162,000	1,000	7,741,000	42,300
Indiana, Illinois	52,948,000	157,000	15,909,000	928,000	38,124,000	5,500,000	3,925,000	1,575,000	.....	36,549,000	199,700
Oklahoma, Kansas	34,814,000	2,000,000	1,356,000	1,023,000	36,481,000	4,000,000	1,914,000	2,086,000	.....	34,395,000	188,000
Texas	11,389,000	34,758,000	.....	3,690,000	55,647,000	7,625,000	4,319,000	3,306,000	.....	52,341,000	286,000
Louisiana-Arkansas	5,280,000	3,642,000	1,685,000	6,850,000	17,088,000	2,975,000	1,250,000	825,000	311,000	15,952,000	87,200
Rocky Mountain	7,484,000	1,233,000	.....	99,000	8,821,000	1,000,000	1,173,000	827,000	11,000	7,983,000	43,600
California	35,600,000	10,859,000	194,000	4,627,000	40,829,000	*16,100,000	*9,012,000	7,081,000	3,000	33,808,000	184,700
Total United States	225,000,000	65,779,000	65,779,000	27,127,000	252,127,000	48,000,000	27,184,000	20,816,000	7,000,000	224,311,000	1,225,700
Texas Gulf					40,622,000	6,225,000	3,591,000	2,734,000	.....	37,893,000	207,100
Louisiana Gulf		(No basis for estimate)			12,153,000	1,900,000	1,115,000	785,000	311,000	11,057,000	60,400
Total Gulf					52,775,000	8,125,000	4,616,000	3,509,000	311,000	48,955,000	267,500
Inland Texas					15,025,000	1,400,000	818,000	582,000	.....	14,443,000	78,900
North Louisiana and Arkansas		(No basis for estimate)			4,935,000	175,000	135,000	40,000	.....	4,895,000	26,800

Notes: (1) Relatively small offsetting shipments between areas have been eliminated from above calculations. (2) In all the refining districts indicated except California, figures in these columns represent gasoline stocks at refineries. *In California they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States, that is, stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto.

Would Hold Allowable to Present Total

Oil States Advisory Committee Sees No Reason or Inducement for Increasing Production of Crude Oil

The Oil States Advisory Committee made the following report to the governors of the states, represented by the members, at the meeting on Refinery Statistics and Economics, midyear meeting, Division of Refining, American Petroleum Institute, St. Louis, April 15:

To William H. Murray, governor of Oklahoma; Ross Sterling, governor of Texas; Arthur Seligman, governor of New Mexico; Huey P. Long, governor of Louisiana; James Rolph, Jr., governor of California; Harry N. Woodring, governor of Kansas; William Adams, governor of Colorado; Harvey Parnell, governor of Arkansas; George White, governor of Ohio, and A. M. Clark, governor of Wyoming.

We, the representatives appointed by you on the Oil States Advisory Committee, to consider and make recommendations for the betterment of conditions in the oil industry, in which all states represented on this committee have a vital and public interest, hereby report as follows on the question of allowable production of oil in the United States for the six months' period beginning April 1, 1931:

At our meeting held in St. Louis, Mo., April 14 and 15, 1931, we have carefully considered the report of the voluntary committee on economics of the Federal Conservation Board and also the report of the committee on economics of the American Petroleum Institute, as to the probable supply and demand for the six months mentioned. The federal committee estimated a domestic demand, disregarding imports, for 2,521,000 bbls. of oil per day average, including both productions and withdrawals from storage, for the six months' period; and the American Petroleum Institute committee estimated domestic demand for crude oil at 2,568,000 bbls. daily average for the same period.

Our committee is of the unanimous opinion that no sufficient reasons or inducement has been shown in the reports of either of the reports of the committees to justify our states in making any increases in oil allowable production during the six months period (April 1 to October 1, 1931) and that it will be for the best interests of all our states, represented, and we so recommend to our governors and to the various conservation authorities of these respective states, that there be no increase of allowables of production of crude oil within such period of time, beyond the present allowables established in those states where proration or conservation orders are now in force or beyond the present actual production of those other states now producing oil and not having proration or conservation regulations.

Cicero I. Murray,
of Oklahoma, chairman of the Oil States Advisory Board

To Draw From Storage

It is the unanimous opinion of this committee that such program will best promote conservation of the natural resources of our states and will best prevent waste, preserve taxable values and do those other things which are for the direct benefit of our states; and that if the actual needs of the petroleum industry during this period shall exceed the actual production hereby recommended as indicated by both reports hereinabove mentioned, then it will be to the best interest of all concerned for additional needs for crude oil to be filled out of the present excessive amounts of oil held in storage in the United States; or if the owners of such stored oil do not desire to so use said stored oil, then that sufficient inducements should be held out to the various states interested to justify this committee in recommending increase in production to meet such demand.

As a necessary corollary to said recommendations, this committee further calls attention to the voluntary offers of the various importing companies to the Federal Oil Conservation Board, to curtail by at least 25 per cent their importation of crude oil, gasoline and other petroleum products and likewise reduce their actual production of crude oil in foreign countries, such agreements having been made upon a three months' basis initially, commencing April 1, 1931, and contemplating such 25 per cent reductions as compared with the same periods in 1930; and this committee hereby recommends that the continuance of present allowables and rates of production by the various states be contingent upon the continuance, in good faith, for the entire six months' period beginning April 1, 1931, of such 25 per cent (or greater) reduction in importations and in foreign production.

Recommended Allowable

The following are the present daily allowable or production figures upon which these recommendations are based:

	Bbls.
Texas	714,000
Oklahoma	550,000
Kansas	110,000
California	500,000
Arkansas	50,000
Louisiana	65,000
New Mexico	40,000
Eastern States	110,000
Rocky Mountain States	60,000
Total for United States	2,199,000

The foregoing suggestions contemplate possible increase from 525,000 to 550,000 bbls. daily in Oklahoma, if market demand for same shall be adequately shown in proposals now pending before the Oklahoma Corporation Commission to increase the Oklahoma City Field allowable from 125,000 to 150,000 bbls. daily.

Attention of the governors is respectfully called to the fact that daily production for the past week, as reported, totaled approximately 2,250,000 bbls. per day in the United States, but the increase was due to the new East Texas fields exceeding the allowable for that area, due to the fact that the proration order of the Texas Railroad Commission had not gone into effect as to East Texas. This committee recommends that said order be put into full force and effect as rapidly as possible thus bringing production within the figures recommended in this report.

Respectfully sumbitted by Cicero I. Murray, chairman, Oklahoma; W. H. Cooley, California; Carl M. Cox, Wyoming; W. Scott Heywood, Louisiana; T. C. Grimm, Ohio; Warwick M. Downing, Colorado; Van S. Welch, New Mexico; T. H. Barton, Arkansas, and Robert R. Penn, Texas.

THE OIL STATES ADVISORY BOARD

Left to right, sitting: W. H. Cooley, California; W. Scott Heywood, Louisiana; Cicero I. Murray, Oklahoma, chairman; Robert R. Penn, Texas. Left to right, standing: T. H. Barton, Arkansas; Warwick M. Downing, Colorado; Kenner McConnell, Ohio; Carl M. Cox, Wyoming; T. C. Grimm, Ohio; Van S. Welch, New Mexico.

Refining Value of East Texas Crude

Lower Freight Rates and Extension of Pipe Lines Make Cheap Crude Available to Greater Number of Plants. Key to Future Market

By W. T. Ziegenhain

As "cheap" East Texas crude becomes available to a greater number of refiners, as a result of lowering freight rates and extending trunk lines into the field, control of production there is becoming of as much interest to the welfare of refiners as producers. As this field develops and East Texas crude replaces Oklahoma, North Texas, West Texas and even California crudes in domestic and foreign refineries, more and more does East Texas tighten its grip on the key to the immediate trend of the refinery market.

East Texas crude has a relatively high refining value, and fully equal to average Mid-Continent crude. From a manufacturing standpoint it is objectionable only because it contains a rather high percentage of wax which causes the fuel oil made from a skimming operation to have a high cold test and such oil enjoys only a limited market. But this handicap is of little concern to the larger refiners who are balanced for cracking. It will tend to limit the number of new local skimming plants, which are springing up in the East Texas area, because these will have to depend upon selling this oil to the local railroads and local industries. Their excess production will have to meet competition in the markets of Chicago, etc., where fuel oil of low cold test is generally freely offered.

High Octane Value

A factor which offsets the high cold test of the fuel oil is the relatively high antiknock value of the gasoline. Analysis of the gasolines made from crudes produced in several pools in this area all show a favorable knock rating and marked uniformity. This uniformity in the gasolines may also be traced to a rather close uniformity in the crudes produced in scattered wells. Some have assumed from this that what appears now to be small, productive, separate areas will be found to be parts of one large pool. Laboratory analyses and yield data on typical samples of East Texas crude are given below.

Refiners are following the developments in the East Texas area more than they have followed West Texas, Seminole, Oklahoma City and other Mid-Continent flush fields as they were developed because the crude may be made available to a greater number of them at a relatively small investment in pipe lines. In general, however, refiners are not interested in the crude because of its low price for they realize that accompanying low-priced crude comes low refined oil prices and past experience has shown profitable operations to come only when the price of crude is high. Also most refiners have been committed to take the crude from subsidiary or allied producing companies operating in the older fields. They prefer to continue to take this oil but they feel they will be forced into taking East Texas oil and back up their normal source so far as practicable, in order to compete with the other refiners who are running East Texas oil. Thus, the increasing demand for East Texas oil is not because any greater market has been developed for crude but because the abnormally low prices at which it is being offered tends to force itself upon them. Prices as low as 10 cents a barrel are said to be paid for some of this oil in the field. The general price is 25 cents a barrel, compared to about 60 cents per barrel for other Mid-Continent crudes of equal refining value. Going no further, the East Texas oil has an advantage of 35 cents in price.

Refinery Margins

The accompanying refinery realizations based on a skimming operation indicate a gross revenue from the finished products from each barrel of East Texas crude processed of 84 cents. Figured in a similar manner, the revenue from each barrel of Seminole crude processed is 89 cents. Thus 5 cents of the 35 cents difference in the crude cost is equalized, leaving 30 cents advantage in favor of East Texas oil with which to pay a higher cost in getting it to the plant. Where the crude is bought below the posted price, the difference is proportionally increased. A similar relation exists when basing the analysis on a complete skimming and cracking operation.

COMPARISON OF REFINERY MARGINS WHEN SKIMMING EAST TEXAS AND SEMINOLE CRUDES

Typical refinery-revenue-per-barrel statement when skimming East Texas crude, based on per cent refined oil prices in Mid-Continent. (Based on skimming 5,000 bbls. per day in modern plant):

Products—	Market price	Revenue per barrel crude
37% Gasoline (415 endpoint)	.035	.54
6% Kerosene (41-43 gravity)	.025	.06
24% Gas oil (29-30 gravity)	.015	.15
30% Fuel (19 gravity, 110 cold test), bbl.	.30	.09
		.84
Cost of crude in field	.25	
Bare processing cost	.10	.35
Margin left to pay for gathering, transportion of crude, depreciation of plant, interest, taxes and all other expenses		.49

Typical refinery-revenue-per-barrel statement when skimming Seminole, Okla., crude based on present refined oil prices in Mid-Continent. (Based on skimming 5,000 bbls. per day in modern plant):

Products—	Market price	Revenue per barrel crude
39% Gasoline (415 endpoint)	.035	.58
6% Kerosene (41-43 gravity)	.025	.06
24% Gas oil (29-30 gravity)	.015	.15
28% Fuel (19 gravity, 40 cold test), bbl.	.35	.10
		.89
Cost of crude in field	.65	
Bare processing cost	.10	.75
Margin left to pay for gathering, transportion of crude, depreciation of plant, interest, taxes and all other expenses		.14

The above map shows the relative distance between the East Texas Field and each of the important refining centers served, together with the pipe line rates and the new or proposed rail rates to these points.

Laboratory distillation of two samples of typical East Texas crudes taken from wells in the Longview-Joiner area. These were fractionated at atmospheric pressure in a very efficient tower. Plant yields may be expected to be slightly lower on gasoline.

Product	% of crude No. 1	% of crude No. 2
Gasoline (56-57 Gr. U.S.M.)	40.7	39.8
Kerosene (40-41 Gr.)	1.1	1.5
Gas oil	22.2	22.3
Lub distillate	5.6	5.6
Resid (19-20 Gr.)	27.8	27.9
Fixed gases	1.0	1.0
Loss	1.6	1.9

The wax content is estimated at 2 to 2.5 per cent.

Tests on Crude Sample

	No. 1	No. 2
Gravity	39.1	38.7
Sulphur	.25	.27
Pourpoint	45	..

Distillation Tests on Respective Gasolines

Per cent over—	No. 1	No. 2
I. P.	110	109
10	170	170
20	200	201
30	221	225
50	272	272
70	328	324
90	392	392
E. P.	430	430
Gravity	57.2	57.2

Antiknock value better than Seminole straightrun.

Distillation of Crude

(100 cc.)

Vapor temp.—	% over No. 1	% over No. 2
I. P.	97	100
325°	28.5	27.0
350	31.5	30.0
375	34.5	32.0
400	37.0	34.0
425	39.0	37.0
450	41.0	40.0

Laboratory distillation of a sample of typical East Texas crude taken from a well in the Henderson area. This sample was fractionated at atmospheric pressure in a very efficient tower and plant yield of gasoline may be expected to be slightly lower.

Product—	Per cent of crude
Gasoline (U.S.M.)	36.0
Kerosene (41-6 Gr.)	6.0
Gas oil	42.5
Residue	12.5
Loss	3.0

Tests on Crude Sample

Gravity	39.5
Sulphur	.33
Viscosity at 50° F.	61
Viscosity at 100° F.	42
Pourpoint	0

Distillation Test on Gasoline Made

Per cent over—	Temperature
Gravity	59.0
I. P.	103
10%	160
20	190
30	215
50	258
70	302
90	362
95	396
Sulphur	.015%

Distillation of Henderson crude sample carried out in 2-liter flask at atmospheric pressure.

Percentage over—	Temperature
I. P.	68°F.
5%	126
10	200
15	234
20	262
25	306
27.5	333
30	348
32.5	366
35	412
37.5	436
40	455
42.5	466
45	540
47.5	550
50	562
55	592
60	636
65	678
70	696
75	706
80	716
85	730

After completing the atmospheric distillation of the crude to ascertain the

(Continued on Page 124)

Well Records Are of Major Importance

Systematic Study of Operating Conditions on Small Wells Proves of Economic Value to Owners

By L. G. E. Bignell
Petroleum Engineering Editor

ESSENTIAL IN STUDYING EXPENSE OF PRODUCING

Economic conditions in all industries are now such as to make a detailed study of operating conditions of small wells and properties of prime importance. By such studies expense of producing oil can be reduced in many fields, and where such reduction is not possible the well records may form a basis for consolidation of property operations.

The paper that H. M. Stalcup, vice president of the Skelly Oil Co., Tulsa, presented before the Mid-Continent district meeting of the American Petroleum Institute in Tulsa on March 27 on "Complete Records and a Careful Study of Old Properties Profitable," and printed in the April 9 issue of The Oil and Gas Journal, Page 143, has aroused much interest among engineers and executives and a further discussion of this subject has been suggested. This article has been prepared with that in view.

The problems of the petroleum engineer and technician are no longer confined to the mechanical phases but now embrace the much broader subject of economics for, as R. F. MacArthur, vice president of the Barnsdall Oil Co., has often stated in public and private that "he was not in the oil business, but rather in the net profit business, for without an adequate earning on the money invested no business can justify itself for continuing."

This has never been more forcibly demonstrated than at this time when the price of crude oil has been drastically reduced and every economy is necessary to maintain thousands of old wells on a production schedule. This is a time when the attention of the production department of the larger companies has been turned toward the so-called "stripper" properties and every means, consistent with good practice, applied to keep them operative and secure as much of the remaining oil as possible.

Records of individual wells are by no means new in the industry and they have served many purposes in the past, but when crude oil prices were higher there was not the incentive to study them in detail as is now being done, and the result of this intensive analysis of many properties and wells is bringing to light conditions unthought of a few years ago.

After a property had been developed and all wells completed and equipped in the approved style of the field and time, it was customary to turn the lease over to a pumper or leaseman, who was skilled in operating wells of this kind. He pumped the wells and checked with the pipe line gauger when the tanks were ready to run, and made the formal reports to the home office.

These men were skilled in getting the most out of these wells, but it must be admitted that there was a tendency to take a great deal for granted and the home office did not require that the individual wells be gauged frequently, and in the main it was considered good operating practice if a well pumped its required time per month with a minimum of shutdown for repairs.

Checking of Records Now Required

Some operators long ago noted that this system was not all that could be desired or devised, so petroleum engineers were employed to handle the records turned in to the home office and make some kind of an analysis of them and report to the production superintendent their findings with such recommendations as they deemed necessary.

If the case seemed to warrant it the engineer would make a trip to the property to make a personal examination and report, and upon consultation with the production superintendent would decide whether a particular well could be pumped any longer, and, if so, what changes in equipment would be necessary. If it did not appear profitable to continue to produce the well it was plugged and abandoned.

The records show that December 31, 1930, there were 327,268 active wells in this country making an average of 7.6 bbls. of oil per well, and the same record shows that Oklahoma had approximately 60,770 wells active on that date, with an average of 9.8 bbls. each. It is estimated that about 88 per cent of the Oklahoma wells produce less than 10 bbls. of oil daily, and this will place them in the class that is to be covered by this article.

Small Wells Important

These figures are important in that they indicate to the industry in a general way the importance of the small wells, not only in total oil produced but in the wages distributed in Oklahoma to the army of men handling this crude.

It does not follow from this that all wells in this class should be continued on the pump when their earning capacity has been reduced to that low point where it is true economy to plug and abandon them, but it does show the magnitude of the problem confronting both the major and minor operators having wells of this kind.

It should emphasize to the owners of present flush wells that it is most essential that a reserve be built up now to provide an ample working capital to keep these wells in good state of repair against the day when the flush period of production has passed and oil is in general demand. From a study of many old fields it would seem that no such reserve has been maintained by many operators, especially smaller producers, because their properties are now in a poor state of repair and they claim in so many cases that they do not have money to put into new equipment.

This study of the relative number and size of wells in Oklahoma will apply to all other oil-producing states in the Mid-Continent area and to some extent to all other oil states in the East and on the Pacific Ocean.

It, therefore, emphasized the need of accurate records that will show every detail of well operation and not only should such records be kept but they should be studied and analyzed by men competent to fully understand their significance.

Some Examples of Record Study

The larger companies have long kept records that are for the most part quite complete, but it has been noted that in many cases the most was not made of such records because the old property was not receiving its due share of attention from the production department as the members of that department were busy bringing in new production in flush fields, a task that occupies about all the time and energy of those engaged in such work.

However, with oil prices dropping and the outlook for higher prices not promising many executives have recently turned their attention to these older properties and as a result many startling conditions have been brought to light and in most cases promptly corrected.

One case is reported where a six-well lease was carried as producing 6½ bbls. of oil per day. A check and actual gauge of these wells developed the fact that two wells made 6 bbls. of the total 6½ bbls. produced so the other four wells were promptly pulled, plugged and abandoned.

In another case where the lease was on a power and eight wells pumped it was found upon a check that four of these wells were making practically all water, a commodity that was of no value to the producing company.

Another example of the value of a close study of a property is shown where six wells in July, 1929, were making about 163 bbls. of oil at a lifting cost of $1.71 per barrel. This lease was checked and four wells pulled, plugged and abandoned, with the result that in July, 1930, two wells made 149 bbls. per day and the cost of pumping was 62 cents per barrel. This saving in lifting cost amounting to $1.09 per barrel was therefore made at a sacrifice of about 14 bbls. of daily production and fully justified.

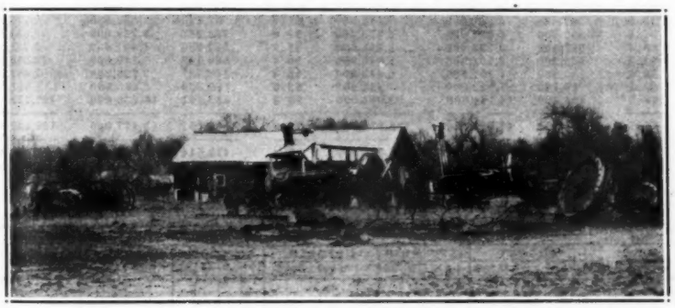
The records are also of much value where consolidations and sales of properties are under consideration, for at such times production superintendents, executives, legal departments and engineers for all companies interested are called upon for opinions and it has been found that some very desirable consolidations of leases have failed of accomplishment because the owners of the several groups of wells could not agree upon base values.

Value of Depletion Curves

The value of a property based upon future production as developed by depletion curves may also be misleading because engineers are not in accord as to the proper type of paper upon which to plot such curves, some recommending co-ordinate, others semilogarithmic and still others full logarithmic paper and each group probably right to some extent in its claims. However, from a practical standpoint if engineers cannot agree upon the future possibilities of a group of wells for any reason whatsoever the results are usually "no deal."

One company has therefore dispensed almost entirely with depletion curves and instead has set up a system of accounting that takes into consideration the original investment in the lease. As the oil is produced this net earning is credited against the original investment and if the property is a productive one in time the capital will be returned to the company

(Continued on Page 132)



Miscellaneous material accumulated on old lease in Nowata area.

Old power house in Cody Bluff district, Oklahoma, built out of native oak lumber many years ago and still in good state of repair.

Vapor Lock a Problem of Motor Design

Automobile Manufacturers Could Simplify Refinery Technologists' Troubles. Discuss Corrosion Problems

By Robert C. Conine

ST. LOUIS, Mo., Apr. 18.—Refinery engineers were in complete agreement at the opening technical session Wednesday afternoon of their division of the American Petroleum Institute here on the proposition that the automobile manufacturer is responsible for two of the major difficulties now confronting the refining industry. Expressions to this effect followed the reading of two papers covering the subjects of detonation and vapor lock.

Dr. H. C. Dickinson, of the United States Bureau of Standards, read the paper on "Progress Toward a Standard Method for Determining the Antiknock Value of Motor Fuels," and Dr. O. C. Bridgeman, also of the Bureau of Standards, presented the paper on "Automobile Fuel Line Temperature and Vapor Lock."

In the matter of detonation the part played by the automobile manufacturer was not adversely criticized. Rather, it was pointed out that the makers of automobile engines are setting a pace to obtain much greater horsepower from a given quantity of gasoline by raising the compression ratio progressively as the motor fuel is improved.

Laboratory and Road Tests

The discussion on the methods of obtaining antiknock value ratings brought up the question as to whether the laboratory results can be correlated with actual road tests. In this connection E. W. Isom, of Sinclair Refining Co., said he had found some discrepancies in these results. Similar findings were brought out in the discussion by Dr. George G. Brown, of Michigan University. It was suggested laboratory results will become practically identical with those from actual road work when data already obtained, or expected to be obtained, on spark timing, carburetor adjustment, jacket and cylinder head temperatures, etc., are put to use. Dr. R. E. Wilson, of Standard Oil Co. of Indiana, pointed out that two fuels of equal knock rating at one temperature had different ratings at another temperature. Doctor Wilson also reminded the engineers that the assumption is erroneous that a classification of hydrocarbons into "knocking" and "nonknocking" groups is a simple process of arranging naphthenic and paraffinic; aliphatic and carbocyclic, or some such large divisions on opposite sides of a deadline.

A. L. Clayden, of Sun Oil Co., protested against "the use of the octane 'yardstick' as a 'micrometer.'" He said distinctions of fractions of an octane number were impractical and useless. Mr. Clayden added that good reasons existed for showing differences of as much as two octane numbers, pointing out that the importance of this difference varied, as, for instance, in the case of 50 octane number and 52 octane number and that of 70 octane number and 72 octane number. Also contributing to these discussions were Dr. J. Bennett Hill, of Atlantic Refining Co., and A. E. Becker, of Standard Oil Development Co.

Discussions covering the paper on vapor lock took the automobile designer to task. As expressed by R. E. Wilson, "the Government is very particular about the specifications of motor fuel it purchases, but it pays no attention to the antiquated deisgn of the fuel feed systems in the automobiles it purchases." Doctor Wilson said that automobile owners everywhere should report vapor lock trouble to the dealers they bought the car from as a means of bringing the fact home to the manufacturer that he must rearrange the fuel system to eliminate the high increments of heat now affecting the motor fuel.

Motor Design

Data presented showed that in some automobiles the fuel line is so arranged that at certain atmospheric temperatures a motor fuel with the lowest Reid vapor pressure practicable would be boiling in the line in a short time. A number of manufacturers have already taken steps to remedy faulty design and a second series of tests to be carried out this summer will demonstrate the degree of success reached by these manufacturers.

The discussion presented by Dr. George G. Oberfell, of Phillips Petroleum Co., proved of unusual interest. Propane, Doctor Oberfell said, has been in ill repute among manufacturers of motor fuel. Data showing the effect upon vapor pressure of motor fuel by the addition of pro-

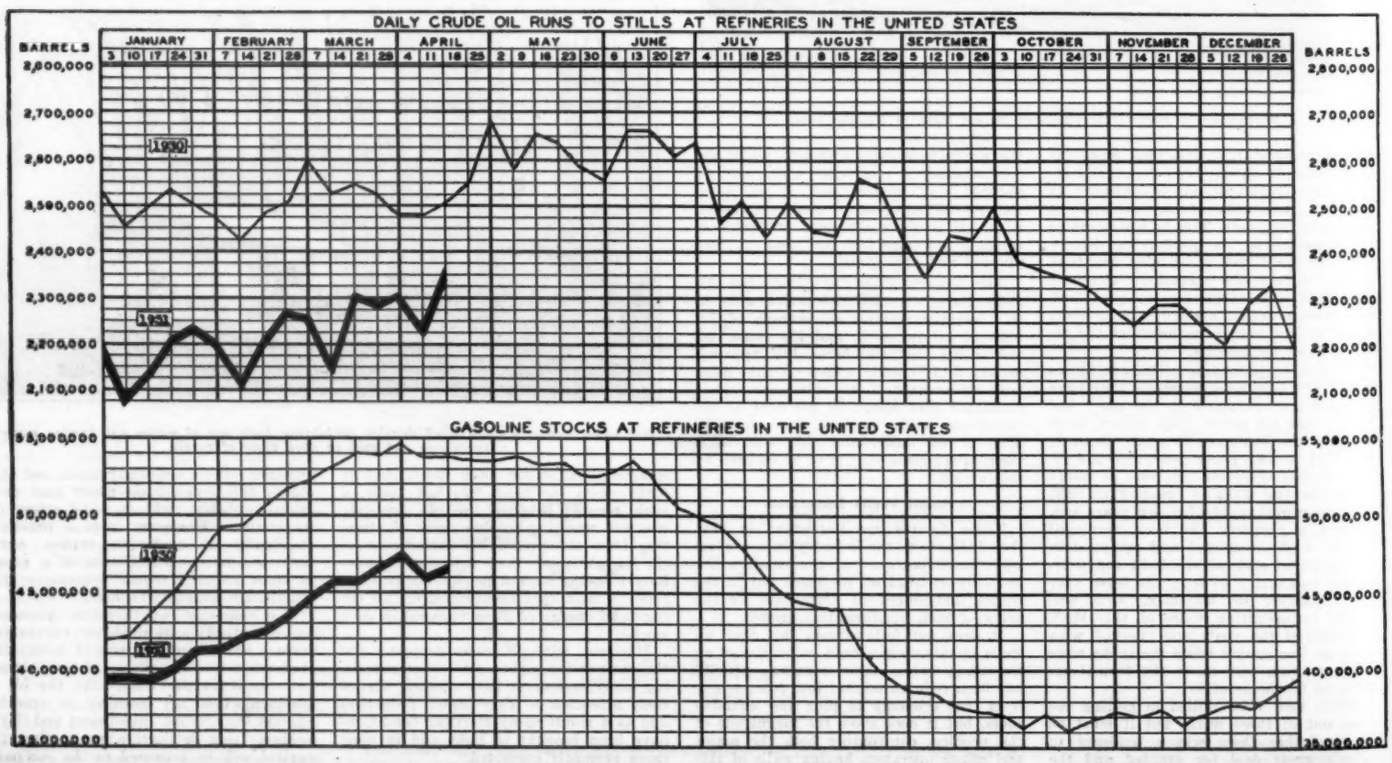
(Continued on Page 55)

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending April 18:

	Week Ending April 18				Week ending April 11				Week ending April 19, 1930			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	454,900	8,793,000	7,733,000	100.0	423,000	9,175,000	7,706,000	100.0	462,871	9,284,000	6,632,000
Appalachian	93.8	32,100	1,861,000	1,216,000	93.8	87,300	1,897,000	1,184,000	91.0	87,814	1,885,000	775,000
Indiana, Illinois, Kentucky	97.5	336,900	6,128,000	3,310,000	97.5	299,400	6,067,000	3,173,000	99.5	329,935	6,769,000	3,323,000
Oklahoma, Kansas, Missouri	89.4	276,000	3,601,000	3,823,000	89.4	267,400	3,533,000	3,748,000	89.1	327,736	4,401,000	3,731,000
Texas	91.9	614,700	7,933,000	8,839,000	91.9	599,900	8,101,000	8,840,000	90 4	564,143	7,819,000	10,279,000
Louisiana and Arkansas	98.3	140,100	2,118,000	2,332,000	98.3	142,900	1,957,000	2,343,000	96.8	168,187	2,726,000	2,052,000
Rocky Mountain	93.1	58,400	1,986,000	810,000	93.1	56,700	1,923,000	832,000	93.6	59,300	2,863,000	1,051,000
California	98.8	471,000	13,964,000	98,772,000	98.8	494,600	14,104,000	99,012,000	99.3	562,171	15,730,000	103,179,000
Total United States	95.7	2,434,100	46,384,000	126,835,000	95.7	2,371,200	46,757,000	126,838,000	95.6	2,552,257	53,477,000	136,037,000
Texas Gulf Coast	100.0	474,000	6,824,000	6,482,000	100.0	455,400	6,933,000	6,509,000	99.4	422,514	6,792,000	7,675,000
Louisiana Gulf Coast	100 0	88,100	1,949,000	1,304,000	100.0	87,600	1,782,000	1,325,000	100 0	104,414	2,361,000	1,184,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



Data for 1931 based on weekly reports of the American Petroleum Institute. Data for 1930 derived from monthly reports of the Bureau of Mines, Department of Commerce. Figures for last week not shown in graph but are included in above tables.

CAPTAIN KIDD *was not a Pirate*

yet was hanged because of a misinformed public!

Waste refinery gases were once condemned as impractical for gas engine fuel. There still remains considerable scepticism.

If you have the least doubt, we will be glad to give you detailed information and refer you to actual operating installations.

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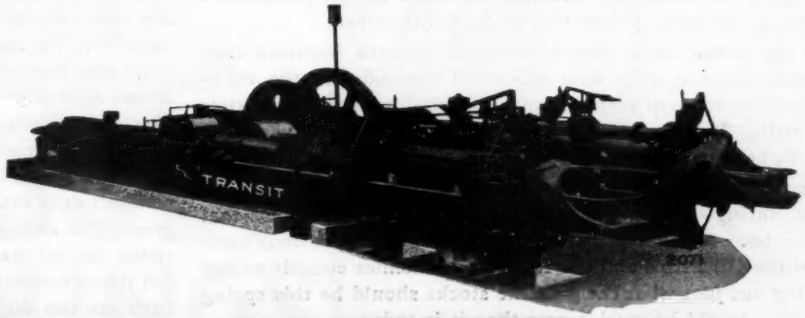

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GUIDE FOR NEXT SIX MONTHS

With all respect to the Voluntary Committee on Economics of the Federal Oil Conservation Board and the American Petroleum Institute Committee on Refinery Statistics and Economics the Oil States Advisory Committee mapped out the most promising course for the industry at the St. Louis meeting.

Whereas the government committee and the Institute committee contented themselves with estimating the daily average domestic crude oil requirements for the next six months at 2,521,497 and 2,568,000 barrels respectively neither attempted to suggest what the domestic crude production ought to be.

The Oil States committee, headed by Cicero I. Murray, went straight to this fundamental question and by recommending that the present allowable production be not exceeded during the next six months, gave the industry a definite limitation for its guidance, a daily average domestic production of 2,199,000 barrels.

Both the Conservation Board committee and the Institute committee were dealing only with estimated demand and the refining operations to supply that demand, including the basic crude runs to stills. Their estimates of crude oil requirements varied so little as to be convincingly corroborative of their correctness.

The value of such authoritative information to refiners was demonstrated during the past six months. There can be no doubt that had it not been for the similar survey made by the previous committee of the Oil Board and the Institute economics committee last fall setting out just what the gasoline stocks should be this spring the situation would be much worse than it is today.

The Pogue committee and the Institute committee set the desirable gasoline stock limit at 40,000,000 barrels for April 1, 1931. This was to be in contrast with 55,000,000 barrels a year ago.

As a result of that warning refiners were able to keep their gasoline stocks down to 48,000,000 barrels, still too high, of course, but a material gain in the right direction contrasted with April, 1930.

A much more drastic reduction must, however, be effected by October next if the industry is to make substantial progress.

The best calculations on demand during the ensuing six months figure a comparatively slight increase in consumption over last year's rate, due to domestic conditions and an estimated decline of from 15 to 17 per cent in exports.

With that outlook it is evident that a gasoline surplus of 48,000,000 barrels must be considerably reduced to bring the industry into a healthy condition.

The Institute's committee has consequently outlined a program of operations providing for a gradual decrease in these stocks until they reach 27,000,000 barrels at the end of September.

Only if some approach can be made to this situation can there be a substantial prospect of getting the industry on a sound basis.

It will require the consistent continuance of the same spirit, resolution and watchfulness which held operations during the fall and winter to within sight of the recommendations of last fall but it will be worth while.

The temptation to overstep these limits will, of course, be much greater during the main consuming season but the danger will also be greater. The slightest disloyalty to this program will inevitably start a slide that may easily overwhelm the industry.

The experience of the past six months shows refiners know what is required and that it can be accomplished if they will set themselves to it loyally and persistently.

This, however, is without touching upon the crude production situation very plainly set out by the Murray committee.

These representatives of the governors of ten oil-producing states, having studied the estimates of both the government and the Institute committees on estimated demand, find "no sufficient reasons or inducement to justify our states in making any increases in allowable production during the next six months."

That is a common sense conclusion to be expected from any impartial observer of the situation. With oil at 30 cents a barrel and threatening to drop to 20 cents or even a dime a barrel any one knew it to be worth more than that. The only reason it could be obtainable at that price was because even a dime a barrel may seem riches to some of those on whose land oil has been found. It is the difference to them between something and nothing.

In such cases it may be useless to argue that they are throwing away their wealth, that they did without oil money so long they might better wait a little longer and get what it was worth. Meanwhile the whole industry was affected by a break in the market below cost of production in the rest of the country; the states find their revenues from oil proportionately reduced; taxes are consequently increased to make up the difference and every industry and business depending in any manner upon the prosperity of the oil industry suffered.

That is the view taken by the Murray committee which led it to make its recommendation that the present allowable be not increased and that whatever additional crude is required be taken from our top heavy stocks which are a burden to the industry and a constant menace to the market.

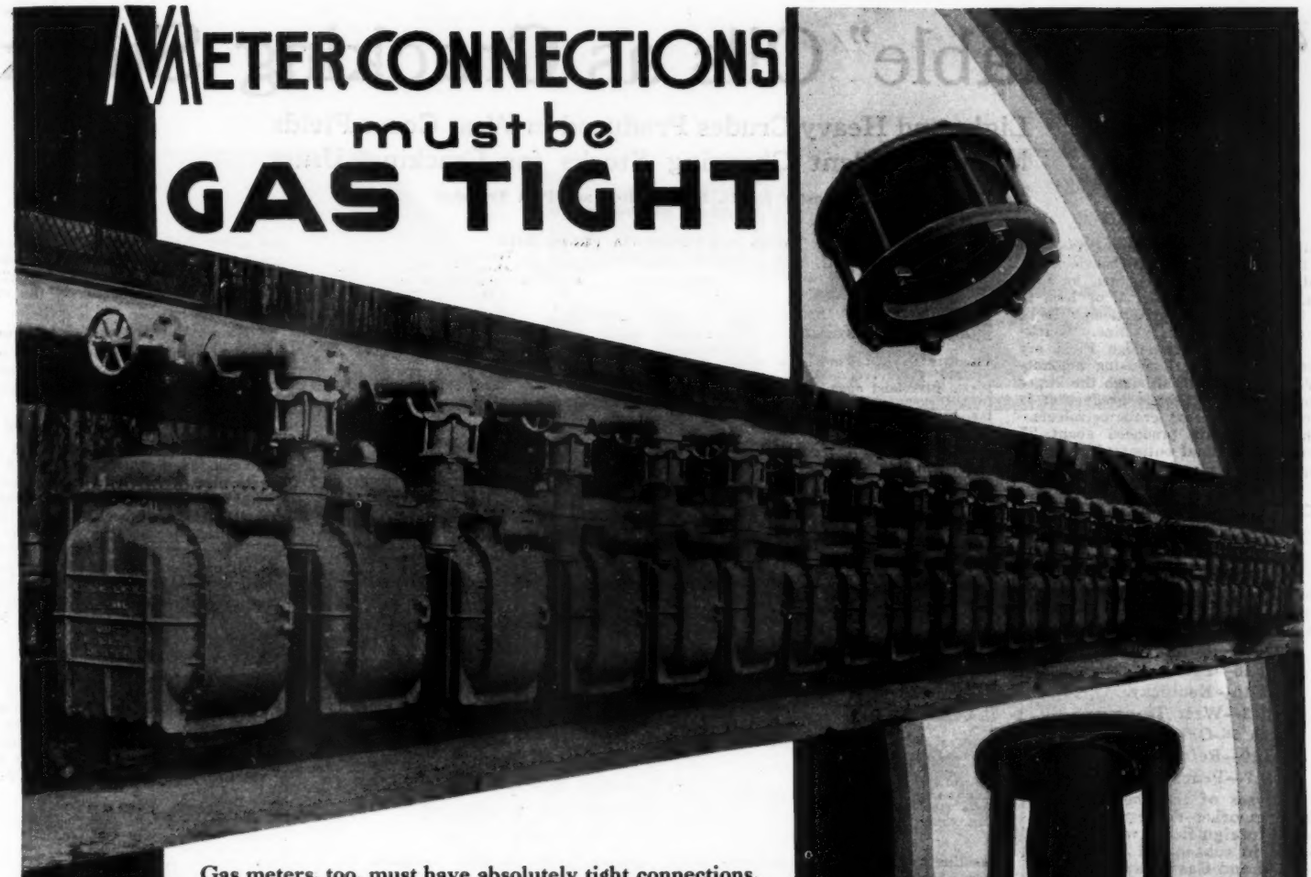
It may have taken somebody outside the oil business, like this Oil States Advisory Committee that owes its origin to Governor W. H. Murray of Oklahoma, to present the situation so simply and clearly that even the most controversial within the industry can see it.

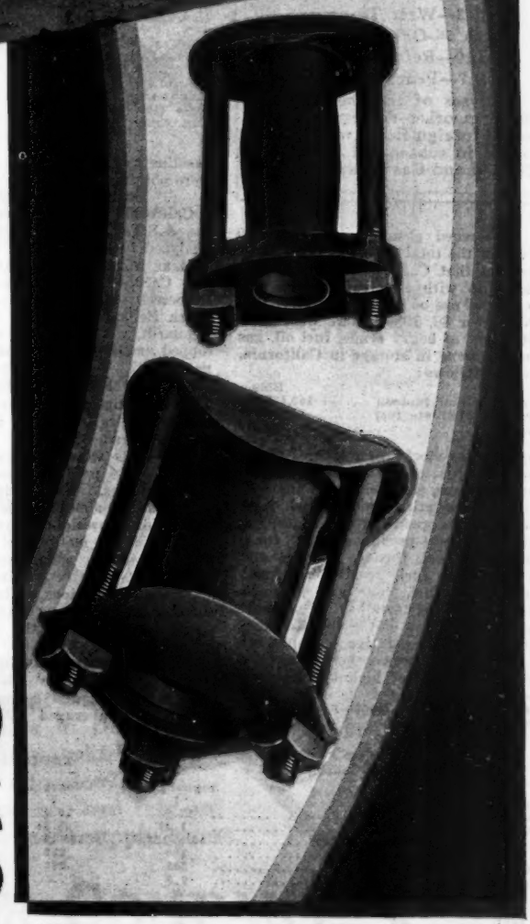
It is not necessary to assume that we must wait on an interstate compact duly ratified by each state legislature and the federal congress. The advisory committee affording a medium of contact between the oil states and fortified with the facts presented by the Oil Board committee and the committee of the American Petroleum Institute can do effective work right now in winning support for its program to restrict wasteful overproduction.

Its services have already been recognized by the administration at Washington where Roy M. Johnson found a sympathetic attitude towards the industry's efforts to solve its problems.

If the East Texas situation can be straightened out, as seems possible, by mutual understanding and the producing industry as a whole makes whatever further sacrifices are necessary to overcome that obstacle and keep production within the general scope of the Murray recommendation, the uncertainty, which is the most disturbing feature of the present situation, will be removed and better days will lie ahead.

METER CONNECTIONS must be GAS TIGHT





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"Unrefinable" Oils as Cracking Stock

Light and Heavy Crudes Produced in West Coast Fields Make Excellent Charging Stocks for Cracking Units

By Gustav Egloff, E. F. Nelson and Paul Truesdell
Universal Oil Products Co.

California's petroleum resources yield oils that range from the heaviest, so-called unrefinable crudes, such as Casmalia, of gravity 10° A.P.I. or less, to very light oils, such as Kettleman Hills, part of which is pure gasoline. Kettleman Hills and the Belridge Field are reported as yielding increasing amounts of this very light oil, although the larger proportion of the State's production is still composed of heavy crude petroleum.

While California produced about 25 per cent of the total output of crude oil in the United States in 1930, its production of cracked gasoline was only 8.0 per cent of the total. This is illustrative of the fact that California refiners have not kept up with refiners in other districts in the use of the cracking process. On November 30, 1930,[1] there were 109,961,000 bbls. of heavy crude, fuel oil, gas oil and kerosene in storage in California, divided as follows:

	Bbls.
Heavy crude and fuel oil	103,553,000
Gas oil and distillate fuel	4,699,000
Kerosene	1,709,000

Any of these stocks, or mixtures thereof, when subjected to cracking under proper conditions, can yield large amounts of high knock-rating motor fuel. By variation of the operating conditions, the cracking process produces from these stocks, motor fuel, furnace oil, gas and coke; or motor fuel, residue and gas; or just motor fuel, coke and gas. A number of cracking tests have been made on these three types of California cracking stocks. Representative examples of such tests are reported here, showing the excellent yields of high knock-rating gasoline and other useful products which were obtained.

[1]Bureau of Mines, Monthly Petroleum Statement, p. 73.

SERIES ON REFINING

In addition to this article similar analyses have been published of crudes in other fields as follows:

April 16—Mid-Continent.
April 16—Pettus, Texas.
April 16—Kentucky.
April 2—West Texas.
March 5—Oklahoma City.
Feb. 19—Refugio, Texas.
Feb. 12—Pennsylvania Grade.

Analyses of the crudes produced in other domestic fields and in foreign fields will be included in subsequent issues of The Oil and Gas Journal.

Cracking California Oils

California heavy oils were distilled by the A.S.T.M. 100 cc. method and were analyzed for sulphur and b.s. content as well as viscosity, flash and fire values. Six California heavy crude oils from Posocreek, Maricopa flats, Kern River, Terra Bella, and a blend of Tegeler and Lehnardt, were analyzed, as well as nine topped crude oils from the fields of Signal Hill, Ventura, Alamitos, O'Dea, Rosecrans, Fullerton, Montebello, Midway, Huntington Beach and Elwood Terrace. Results obtained are shown in Tables 2 and 3:

These oils were subjected to cracking operations to produce pressure distillate, coke and gas. The mode of operation is called the simultaneous cracking and coking, or nonresiduum type from which high yields of motor fuel are obtained. By varying the conditions of cracking, residual oils may be obtained which pass market specifications. Results of only simultaneous cracking and coking operations are given for the heavy oils described above.

Operating Conditions

The pressure under which conversion by the cracking and coking method was carried out averaged 125 pounds per square inch with some variation for a few stocks, and temperatures ranged from 800° to 860° F. Conditions of temperature and pressure for the individual tests are tabulated in Table 4.

TABLE 2—CALIFORNIA CRUDE OILS

Test No.—	Posocreek A	Posocreek B	Maricopa Flats C	Tegeler, Lehnardt 50-50 blend D	Kern River E	Terra Bella F
Gravity	15.4	13.7	15.4	15.3	16.6	16.8
Sulphur, per cent	0.75	1.29	1.05	0.92	0.94	0.34
Nitrogen	0.25	0.90	0.94	0.30	....	....
Viscosity Saybolt Furol Sec. at 122° F.	117	...	...	226	168	71
Flash, Cleveland open cup	285	...	...	265	220	305
Fire, Cleveland open cup	330	...	...	305	270	355
B.s. benzol centrifuge, per cent.	1.6	...	...	1.6	...	0.1
Initial °F.	486	318	290	475	404	530
Per cent distilled over — Temp. °F.						
10	568	496	482	551	537	578
20	630	595	565	608	614	603
30	664	639	629	653	654	...
40	678	647	668	665	675	...
50	685	674	676	637	687	...
60	691	676	673	603	690	...
70	698	660	660	650	700	...
80	695	680	689	640	695	...
90	...	...	650	...	...	...

TABLE 3

Test No. (from crude oils)—	A	B	C	D	E	F
Cracked distillate:						
Per cent by volume of charge	58.6	70.0	72.9	57.3	61.1	60.8
A.P.I. gravity	44.0	39.6	41.0	40.6	48.0	41.7
Gas (cu. ft. per bbl.)	838	874	785	1,073	987	1,008
Coke (lbs. per bbl.)	56.0	73.0	42.0	92.0	76.6	73.0
Gas, coke, loss	39.5	29.4	26.7	42.5	38.9	39.2

Test No. (from topped crudes)—	1	2	3	4	5	6	7	8	9
Cracked distillate:									
Per cent by volume of charge	65.1	74.0	72.0	80.8	70.0	76.3	69.4	69.2	78.8
A.P.I. gravity	44.3	49.1	48.6	47.9	48.2	47.4	50.2	46.9	47.7
Gas (cu. ft. per bbl.)	455	542	698	517	894	547	572	860	670
Coke (lbs. per bbl.)	89.0	60.0	62.0	38.0	67.5	47.3	75.8	83.0	44.0
Gas, coke, loss	34.9	26.0	28.0	19.2	30.0	23.7	30.6	....	21.2

TABLE 4

Test No.—	Pressure lbs. per sq. inch	Liquid temp. °F.
Crude oils:		
A	125	830
B	125	835
C	125	840
D	120	850
E	125	845
F	100	822
Topped crudes:		
1	125	860
2	125	816
3	125	835
4	125	840
5	125	835
6	125	810
7	125	820
8	100	800
9	150	820

Products and Yields

A summary of the yields of products from the pressure distillation is shown in Table 5. Pressure distillate yields from the heavy crude cracking stocks were more than 57 per cent of the charge, while from the topped crudes more than 65 per cent of cracked distillate was obtained.

Cracked Gasoline

Table 6 shows results of analyses of the motor fuels obtained from the above cracked distillates. Between 44.5 and 61.2 per cent of high knock-rating, 437° F. endpoint gasoline, based on the charge, was obtained.

Diesel, Furnace or Tractor Fuel

The pressure distillate bottoms is useful as a Diesel, furnace or tractor fuel. Yields of this fuel for each test are tabulated in Table 7.

Cracking California Gas Oil

Using gas oil from California crude petroleum as a cracking stock, an average of over 56 per cent cracked gasoline was obtained by the flashing method. The motor fuel had a knock rating of 55 per cent benzol equivalent or 69 octane number. The charging stock was a California gas oil of 26.9° gravity, 34 per cent of which distilled over at 600° F. Its sulphur content was 0.80 per cent and 0.02 per cent of sediment was found by extraction.

Two commercial runs were made on this oil by the flashing method, cracking continuously for 43 days under a pressure of 275 pounds per square inch. The total throughputs for the two runs were 111,660 bbls. and 99,813 bbls. respectively. Temperatures at the various stages of the operation are shown in Table 8.

TABLE 8

	Temp. °F.	
Furnace above tubes	1,230	1,450
Furnace below tubes	930	960
Transfer line	892	890
Vapors to condenser	537	528
Reflux	774	805
Hot feed	430	...
Residuum	770	...

Pressure distillation of this gas oil charge yielded 59.34 per cent of cracked distillate of 52.8° A.P.I. gravity from one test, and 60.86 per cent of a product of 52.5° A.P.I. gravity from the second test. Yields of cracked residue were 32.35 and 32.24 per cent respectively with corresponding A.P.I. gravities of 6.1° and 7.9°. Sediment was 0.13 and 0.2 per cent of the charge in the two tests, and the per cent of gas, coke and loss was 8.31 for the first run and 6.9 for the second. The amount of coke obtained was 0.1 pound per barrel of charge in each case.

Distillation of the pressure distillate after chemical treatment yielded high knock-rating cracked gasoline which amounted to 56.1 and 57.82 per cent of the original charge for the respective runs, with corresponding gravities of 56.4° and 55.5° A.P.I.

Table 9 shows the typical characteristics of the pressure distillate before and after treatment, and the gasoline and bottoms which were obtained by distillation of the treated pressure distillate, when

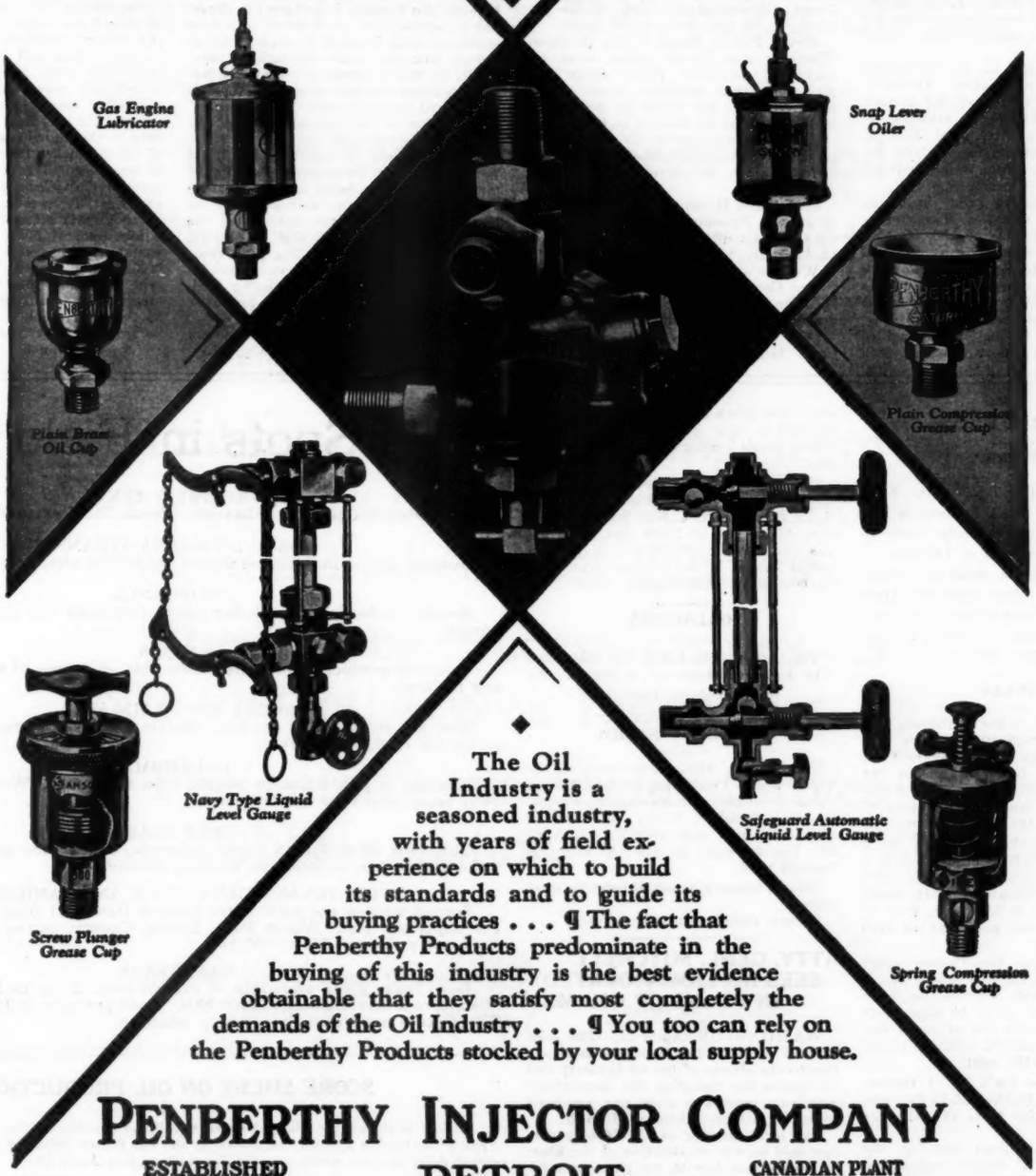
(Continued on Page 126)

TABLE 5—CALIFORNIA TOPPED CRUDE OILS

Test No.—	Signal Hill 1	Ventura 2	Alamitos 3	O'Dea Rosecrans 4	Fullerton 5	Montebello 6	Midway 7	Huntington Beach 8	Elwood Terrace 9
Gravity	17.2	20.1	19.6	25.7	18.4	21.3	16.9	18.0	25.5
Sulphur, per cent	1.39	1.28	1.37	1.64	0.72	0.77	1.85	....	0.30
Viscosity Saybolt Furol secs. @ °F.	83 @ 122	135 @ 77	45 @ 122	33 @ 77	41 @ 123	45 @ 77	115 @ 122	349 @ 77	34 @ 77
Flash, Cleveland open cup	260	225	240	212	210	235	275	320	210
Fire, Cleveland open cup	305	260	265	226	245	250	315	336	240
B.s. benzol centrifuge	0.3	...	...	...	...	...	...	...	0.1
Initial	468	435	440	430	435	419	500	318	430
Per cent distilled over									
10	588	515	520	484	500	476	565	506	482
20	636	575	582	510	562	526	618	580	520
30	666	638	650	556	625	589	665	640	556
40	668	685	700	606	682	648	700	656	600
50	664	704	640	657	718	655	719	668	650
60	654	725	680	680	734	651	719	668	690
70	648	728	700	698	710	675	714	652	686
80	662	733	657	720	733	682	698	634	680
90	...	737	635	714	670	725	685	...	700
Endpoint	704	740	705	722	750	725	724	...	700
Liquid recovery, per cent	81	91.5	92.0	94.5	95.0	95.0	93.0	85.0	95.0
Per cent over at 410° F.	0	0	0	0	0	0	0	2.0	0
Per cent over at 572° F.	9	19.5	18.0	35.5	22.0	27.5	11.5	15.0	24.0
Coke, per cent by weight	9.6	7.8	8.8	6.1	8.6	8.2	7.0	17.4	4.6

PENBERTHY PRODUCTS

PREDOMINATE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Snap Lever Oiler
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East Texas Field Will Be Curtailed

Starting With 130,000 Bbls., Production Will Be Permitted to Increase to 150,000 Bbls. Humble's New Prices and Tariffs

AUSTIN, Tex., Apr. 21.—A 60-day truce in the matter of prorating production in the East Texas Field, including an agreement to increase the allowable production above the Railroad Commission's 90,000-bbl. initial figure, and to pay producers a higher than present posted price for their oil was reached by the East Texas Lease, Royalty and Producers Association, and attorneys and members of the Central Proration Committee, in Austin, Monday night, subject to the approval of the Railroad Commission and District Judge J. D. Moore, who enjoined the commission from enforcing proration against Carl Estes' leases.

Mr. Estes, Judge C. L. Brachfield, president of the association; David L. Trammel, Charles F. Roeser, Ed A. Landreth and R. E. Hardwick, attorney for the proration committee, and Jack B. Robert, reached the agreement, with Attorney Dan Moody acting as advisors for the East Texas producers.

The three producing areas in Gregg, Rusk and Smith Counties, Texas, were given a daily allowable of 130,000 bbls. by the Railroad Commission as result of the meeting yesterday. The allowable will be increased every 15 days until a maximum of 150,000 bbls. is reached. This new allowable will no doubt prevent the proposed injunctions being filed against prorating the areas and will probably cause the withdrawal of the injunction already in force on one group of leases.

HUMBLE'S NEW PRICES AND LOWER TARIFFS

HOUSTON, Tex., Apr. 20.—Effective April 21 the Humble Oil & Refining Co. will post the following new prices:

Ranger, North Texas, Moran and Cooke County Fields, below 29 gravity, 33 cents; 29-29.9 gravity, 35 cents, with 2-cent differential for each degree upwards to 40 and above at 57 cents.

Mexia, Powell, Boggy Creek, Richland, Wortham and Currie prices were unchanged, and East Texas crude was placed on that schedule, which ranges from 43 cents for below 29 degrees up to 67 cents for 40 degrees and above.

Gray County, below 35 gravity, 33 cents; 35 gravity, 35 cents, with a 2-cent differential to 40 gravity and above at 45 cents.

Carson and Hutchinson Counties, below 35 gravity, 30 cents; 35 gravity, 32 cents, with a 2-cent differential to 40 and above at 42 cents.

Winkler and Pecos Counties, 35 cents.

Lea County, New Mexico, 32½ cents.

Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, 30 cents.

Gulf Coast, Grade A, 70 cents; Gulf Coast Grade B, below 25 gravity, 60 cents; 25 gravity, 61 cents, with a 2-cent differential to 35 gravity and above at 81 cents.

Refugio crude, same as Gulf Coast Grade B.

Mirando, 60 cents.

Salt Flat and Darst Creek, 53 cents.

Pettus, 75 cents.

Will Reduce Tariffs

Coincident with the general reduction in crude prices over Texas except in the East Central Texas Fields and the posting of a schedule in the new East Texas district, Humble Oil & Refining Co., through the Humble Pipe Line Co., Tuesday announced that as early as interstate schedules could be made to apply it would reduce pipe line tariffs throughout practically its entire system to the extent that total delivery charges on crude oil would be lowered approximately 20 per cent.

According to the announcement of the Humble companies the revision in crude prices, including a schedule for East Texas, and the coincident lowering of pipe line rates are being made to provide an adjustment in the delivered cost of crudes from the various districts of the state at tidewater on the Gulf of Mexico, where the major part of Texas oil finds outlet, thus equalizing prices of crudes in other fields, with the existing Mid-Continent price being posted for East Texas crude.

The new East Texas prices as posted by Humble Oil & Refining Co. range from 43 cents for below 29 gravity to 67 cents for 40 gravity and above. This schedule is the same as applied to Mexia, Powell and other East Central Texas fields, which were unchanged in the crude reduction effective Tuesday. Considering that East Texas oil is largely 39 gravity most of the oil would be bought at 65 cents. These prices are considerably above the present prevailing prices and quotations for this oil but have been posted with a view toward the establishment of a more stabilized situation.

Considering the present low rates of moving East Texas crude to tidewater, the present schedule with the reduction in other areas and the lowering of pipe line rates will create an equalization which will serve to help producers in the other areas to meet the burden of competition of East Texas oil and to permit the moving of larger quantities of oil to market from those areas. This is demonstrated in comparative delivery costs of Gulf Coast ports of West Texas and East Texas oils. The new price of Pecos County oil is 35 cents, which with a minimum of 5 cents gathering charge would total 40 cents. The present tariff is 55 cents, loaded, but with a 20 per cent reduction this would be 44 cents, making the total, delivered at the coast, 84 cents. Humble's new posted price of 39 gravity East Texas oil is 65 cents,

(Continued on Page 126)

Late Fields

EAST TEXAS

FORT WORTH, Tex., Apr. 21.—Oriental Oil Co.'s No. 1 Johnson in Kilgore Townsite, Gregg County, came in for an initial production of 140 bbls. in 30 minutes through a 60-64-inch choke through 2½-inch tubing producing from sand cored from 3,524-42 feet. This well makes a mile eastern extension to production in the Kilgore Field.

KANSAS

Barnsdall Oil Co.'s No. 1 Turner, NW cor. SW Section 28-20-10w, about a mile south of production in the Schurr Pool, in Rice County, found water in the Schurr sand at 3,265-69 feet. The 5-inch casing was being landed preparatory to drilling deeper to the Silicious lime.

Lario Oil & Gas Co. and others' No. 1 Heckard, SE cor. NW Section 18-27-2, a half mile north of production in the Eastborough Pool, in Sedgwick County, found the top of the chat at 2,997 feet, with no oil showing and was preparing to drill into the formation.

New wells in the Ritz-Canton area: Phillips Petroleum Co. and others' No. 3 Winn, NE cor. NW SW Section 7-20-1w, made 120 bbls. of oil in nine hours flowing and 2,000,000 feet of gas a day from the chat at 2,930-82 feet. It is estimated to be a 350-bbl. well.

Lario Oil & Gas Co.'s No. 1 Becker, SW cor. SE SE Section 36-19-2w, was standing full of oil from the chat at 2,940-79 feet.

An interesting wildcat test on the Ellsworth arch, H. C. Detrich and others' No. 1 Purcell, NW cor. Section 33-19-9w, Rice County was believed to be logging favorably. It was drilling at 1,200 feet. The test is located about 5 miles south of the Shell Petroleum Corp. and others in Section 33-18-9w, which made 710 bbls. in four hours, 2 miles south of Muth Brothers well, which is estimated at 400 bbls., and approximately 3½ miles northwest of Cress and others' 1,500-bbl. well. The Muth Brothers well found production in new horizon, while all the others found production in the Silicious lime.

Gas was found in a Rush County wildcat test, Dewey and Mitchell and others' No. 1 Greenawalt, C SW Section 17-19-16w, found gas at 2,160 feet. The gas was estimated at 500,000 feet a day. The test is located in the southeast corner of the county and was drilling deeper.

OKLAHOMA

The production from the Oklahoma City Field continues at a high figure,

(Continued on Page 128)

MAGNETIC STORM

The Tucson, Ariz., observatory of the United States Coast and Geodetic Survey reports a magnetic storm started at 8 a.m. (Central Standard Time) on April 19 and ended at 7 a.m. (C.S.T.) on April 20. The messages to The Oil and Gas Journal read:

"Storm began nineteenth fourteen moderate."

"Storm ended twentieth thirteen."

ATTY. GENL. MITCHELL SEES NO LAW VIOLATED IN PLANS OF OIL MEN

WASHINGTON, April 21.—The solid support given by the Hoover administration to the efforts of the oil industry and the states for restoring the demoralized petroleum trade was given new emphasis today by Attorney-General Mitchell.

The legal member of the Hoover cabinet said he saw no violation of the Sherman anti-trust law in the plans now being worked out. His statement was understood to refer to the voluntary restriction of crude oil by the industry in each state; the compact between the oil producing states which is being promoted by the Oil States' Advisory Committee, and the imports limitations, voluntarily adopted by each of the principal users of foreign oil at the instance of Secretary Lamont.

High Spots in Field News

SOUTHWEST TEXAS

San Patricio County test has gas. Pettus Field extended.

NORTH LOUISIANA-ARKANSAS

Burning gasser in Richland Parish controlled after two years.

CALIFORNIA

Another reduction feared, but hopes expressed low prices will be temporary.

KANSAS

Potential production of State 52,000 bbls. in excess of actual. Tests near pay in Reno.

ROCKY MOUNTAIN AREA

New gas structure in northern Moffat County, Colorado. Disagreement in Eunice Pool, New Mexico.

OKLAHOMA

Increase of production to 584,500 bbls. temporary. West side of Capitol Pool being tested for shallow sands.

GULF COAST

Gulf sells High Island Dome interests. Flank sand production at Sorrento Dome. Dry wildcats in Victoria County.

WEST TEXAS, NORTH TEXAS AND PANHANDLE

Second well in northern Ector County flows 451 bbls. Irion County to get important test. Wheat Pool, Loving County, active. Wichita County deep test estimated 250 to 350 bbls.

EAST TEXAS

East Texas given allowable of 130,000 bbls. daily, to be increased each 15 days to a maximum of 150,000 bbls. Rock pressure in Lathrop Pool falls. Three pools practically joined by production.

SCORE SHEET ON OIL PRODUCTION

Below is shown the allotted average daily production in the United States from April 1 to October 1, 1931, suggested by the Oil States Advisory Committee, and the actual daily average production in the week ending April 18:

	Barrels			
	Allotted	Actual	Over	Under
Oklahoma	550,000	584,475	34,475	.....
Texas	714,000	880,456	166,456	.....
California	500,000	524,500	24,500	.....
All others	435,000	429,000	.....	6,000
Total	2,199,000	2,418,431	225,431	6,000

Net daily average overproduction, 219,431 bbls. per day.

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Potential Tests in Oklahoma Ended

Increase of Production to 584,500 Bbls. is Temporary. Testing West Side of Capital Field for Shallow Sands

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

Oklahoma's daily average crude oil production shows a substantial increase for the week ending April 18. The State averaged approximately 584,500 bbls. a day, an increase of 71,500 bbls. The increase is from the Oklahoma City Field and the Greater Seminole area. April potentials were still being taken in the Oklahoma City Field and operators in the Greater Seminole area were allowing the wells to make almost a full month allowable gauge in the first two weeks of April. The State's production is expected to show a decrease the last two weeks of the month. Potentials are expected to be completed in the Oklahoma City Field in a few days and the operators in the Greater Seminole will curtail production the last half of the month.

Oklahoma City Field set a new peak in production April 16, when the field made 283,576 bbls. of oil from 126 wells, with 756 wells completed in the field.

A survey of the west side of the Oklahoma City Field by geologists is under way. A systematic check and study of the natural gas horizons of the Oklahoma City Field is under way to determine if possible whether shallower horizons may be found to be productive. The check will be considered when the future development takes place, since the present production in the deep zones will be sufficient to keep plenty of oil and gas available for several years to come.

In checking the western edge of the field, particular attention is given to the Wilcox sand horizon. Some express the opinion that west of the present Wilcox sand horizon shallow pays may be found in the Hunton lime and Viola lime horizons, which are expected to rise on the flanks of the structure. The Wilcox sand pay it is thought extends into the residential section and possibly into the business section of Oklahoma City. Drilling in these sections may never be accomplished because of the restrictions that are now in force which prevents the drilling of wells north of the railroad tracks and the costs of development.

The pipe line company representatives and crude oil purchasers of the Oklahoma City Field were called for a hearing before the Oklahoma Corporation Commission Friday, April 17. The allowable production of the Oklahoma City Field was expected to be increased from 125,000 bbls. a day to 150,000 bbls. a day. The old allowable was 6¼ per cent of the 2,000,000-bbl. rated potential per day. The April potential of the Oklahoma City Field was estimated to be approximately 7,157,270 bbls. in one day. The estimate was made by Otto Bradford, the field umpire, based on the individual four-hour tests of wells. Potentials of 498 wells have been taken by April 18, with a total of 756 wells completed in the field.

The production of Oklahoma City Field average approximately 190,700 bbls. of oil a day for the week ending April 18. Pipe line runs from the field averaged approximately 170,000 bbls. a day, a difference of 20,000 bbls. a day which went to storage.

The total recovery of the field to April 13 was 55,758,300 bbls. of oil, with a total of 756 wells completed in the area.

Water Instrusion

Water intrusion in the Oklahoma City Field is becoming a factor in the daily production with at least 70 wells now showing water. The water is showing in the Johnson and School Land sands from which at least two-thirds of the production in the field is found. About 400 wells in the Oklahoma City Field are producing from the Johnson sand, and about 104 wells from the School Land sand. About six months ago the first water began showing on the west edge of the Johnson sand horizon in Section 2-11-3w, and since that time has spread to the east a distance of about 100 feet up structure, or about a mile on the surface. The wells have been allowed to produce less than 24 hours each month, indicating the water is moving fast.

The encroachment of water starts at the edge of the producing sand and it has started in the School Land sand and the Johnson sand and in a few of the Wilcox sand wells. The water follows the porous part of the sand and travels slower in a tight part of the sand.

An estimate of the number of wells producing from different sands is as follows, 112 wells from the Silicious lime, 400 from the Johnson sand, 104 from the School Land sand, and 140 from the Wilcox sand.

It is believed by some that the water intrusion will reduce the ultimate recovery of oil from both the School Land sand and the Johnson sands. The water encroachment has already reduced the accumulative recovery from the Silicious lime.

The only satisfactory way the operators can produce the wells in the Oklahoma City Field, from the Johnson and School Land sands is under curtailment, which enables them to hold a back pressure on the wells at all times. If the water travels a distance of 100 feet up structure in six months with the wells on production only four or five days, it would be considerably more if the wells were allowed to flow wide open.

Some express the opinion the accumulative recovery from the Wilcox sand will be large. The Wilcox sand extends around the entire edge of the Oklahoma City Field and varies from a half mile to a mile wide in different parts of the field. The sand is more than 100 feet thick in some wells and many express the opinion it may be the last chance the operators have of finding production in the field.

New Wells in Capital Field

Mabee Producing Co.'s No. 1 Mills, SE cor. NE NW Section 10-11-3w, flowed 2,295 bbls. of oil in one hour from the Wilcox sand at 6,338-6,510 feet. The gas was estimated at 31,000,000 feet a day. Phillips Petroleum Co.'s No. 1 Forrester, SE cor. NE Section 3-11-3w, made 7,100 bbls. of oil in four hours from Wilcox sand at 6,266-6,377 feet. The gas was estimated at 55,500,000 feet a day. The well produced through a 3¼-inch choke with 150 pounds back pressure.

An interesting well now drilling on the northwest edge of the Oklahoma City Field which may extend the production is Marco Oil & Refining Co.'s No. 1 Refinery, SE cor. NE SE Section 4-11-3w, which was drilling at 4,200 feet. It is the most northwest test in the field and should it be a producing well it will extend production more than a half mile west.

The first 15 days of April the production from the Oklahoma City Field was 2,552,323 bbls. of oil. The allowable production of the field for the same period is 125,000 bbls. a day or 1,875,000 bbls. The field overproduced 677,323 bbls. of oil. The large overproduction is due to the taking of new potentials, which started on April 1.

In Greater Seminole

R. H. Pierce & Co.'s No. 1 Holsey, NW cor. NE Section 17-9-6, Seminole County, is the south offset to the same operators and others' No. 1 Phillips, SW cor. SE Section 8-9-6, which is making around 250 bbls. of oil from the Wilcox sand. The new well is believed to have opened another producing area in the Greater Seminole Field. The producing well is located about three-quarters of a mile from the nearest production in the East Earlsboro Pool.

During the week a shallow sand showing of oil was found in the Sasakwa Pool of the Greater Seminole group. Neal and Milton's No. 1 Thomas, NW cor. NE SW Section 9-6-7, ripped the casing at 865-85 feet, where the well showed for oil, gas and water. The test was drilled to a total depth of 1,500 feet, with the 8-inch casing cemented at 1,200 feet.

Magnolia Petroleum Co.'s No. 1 Powell, NW cor. SW SE Section 15-6-7, in the Sasakwa Pool, Seminole County, found the regular sand at 3,417-21 feet with a showing of water. The test was coring deeper.

In the Wewoka Townsite Pool, Burke-Greis Oil Co.'s No. 3 Henshaw, NW cor. NE NE SW Section 30-8-8, was being completed. The casing was ripped from 3,830-65 feet and again at 3,800-03 feet. The well was shot with 80 quarts at 3,840-70 feet, and swabbed and flowed 365 bbls. of oil in four hours.

West of the Wewoka Townsite, Jarvis & Holm's No. 1 Narcomme, SE cor. NW SW Section 9-7-8, was drilled deeper into the pay horizon to a total depth of 2,987 feet and flowed 185 bbls. of oil in 13 hours, making a total of 435 bbls. of oil in 24 hours.

In the St. Louis Pool, of the Greater Seminole area, Arms Drilling Co.'s No. 1 Duff, NE cor. NW SW Section 10-7-4, flowed 75 bbls. of oil in 24 hours from the Hunton lime at a total depth of 3,870 feet and was shut down.

The new extension well east of the East Earlsboro Pool, R. H. Pierce and Lippa and others' No. 1 Phillips, NW cor. SE Section 8-9-6, continues swabbing at the rate of approximately 500 bbls. a day from the Wilcox sand after being shot several times.

J. A. Hull Co.'s No. 2 Townsend, NW cor. SE SE Section 22-6-3, in the Wanette Pool, drilled the cement plug at 3,529 feet after landing the casing and it made 579 bbls. of oil in 19½ hours. The sand was found from 3,520-57 feet.

Southern Fields

In Carter County, southern Oklahoma, operators in the Tatums Pool are marking time. The potential of the field on March 1 was 50,923 bbls. of oil a day and the allowable production from the field was 5,883 bbls. of oil a day. Carter Oil Co.'s No. 1 Taylor, SW cor. NW NW, Section 19-1s-2w, was spudding. The test was located on the west side of the field. Lesh & McCall's No. 2 Carter, NE cor. SW SW, Section 14-1s-3w, on the northwest side of the field, was preparing to rig up. Magnolia Petroleum Co.'s No. 1 Burton, NW cor. SE NW, Section 30-1s-2w, southeast of production, was shut down waiting for cement to set at 1,600 feet after plugging back from a total depth of 4,115 feet to test a showing of oil found at 1,500-1,600 feet. Louis Sikes and others' No. 1 Hopson, NE cor. NW NE, Section 25-1s-3w, on the south side of the Tatums Field, was landing 8-inch casing at 2,130 feet. The test had sands showing oil from 2,134-2,250 feet, 2,254-69 feet, 2,496-2,526 feet, with a total depth of 2,620 feet. Amos Drilling Co. and others' No. 1 Burton, SE cor. Section 13-1s-3w, on the northeast edge of the field was spudding.

Drilling operations in Stephens County, in the southern part of the State, were mostly confined to wildcat tests. Carter Oil Co.'s No. 1 Florence, NW cor. NE. Section 11-3s-6w, was drilling at 2,800 feet. The test is attempting to find the Wilcox sand.

Crane and Rankin's No. 1 Adkins, NE cor. SE, Section 14-1-9w, is shut down at 3,265 feet in an undetermined formation and it may be drilled deeper.

The Quinton gas field in Pittsburg County showed increased activity during the last week with another completion

(Continued on Page 103)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	Shut down 1,233 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Drlg. 5,415 ft.

BECKHAM COUNTY

Price-McFann's No. 1 Webster, C SW SW Sec. 34-8-26w	Fishing 2,190 ft.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cement to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-2-22w	Shut down 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 34-10-24w	Drlg. 3,025 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	Shut down 4,665 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	Shut down 1,115 ft.

COAL COUNTY

McGraw Oil Co.'s No. 1 Ward, NE SE Sec. 35-1-8	Shut down 982 ft.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Shut down 760 ft.

COMANCHE COUNTY

Croy & Young's No. 1 Cline, NW NE NE Sec. 9-3-10w	Shut down 2,282 ft.
G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 1,450 ft.
J. R. Travis' No. 1 Pickett, NE cor. Sec. 3-1-11w	Drlg. 750 ft.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,850 ft.

GRADY COUNTY

J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Shut down 100 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	Rig.
Skinner's No. 1 Elrod, SW cor. Sec. 13-2-3	Drlg. 1,120 ft.

GREER COUNTY

French's No. 1 Murphy, SW NW Sec. 23-7-21w	Drlg. 1,540 ft.

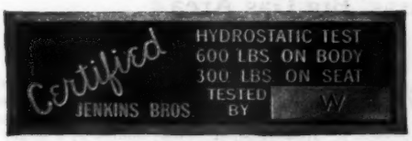
HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w	Abandoned 2,593 ft.

HARPER COUNTY

Empire's No. 1 Bruce, C NE SW Sec. 12-25-20w	T. D. 7,935 ft.; plugged back to 7,500 ft.; shot 30 qts. 7,270-7,300 ft.; plugged back to 5,568-82 ft.; shot 50 qts.; cleaning out.
Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w	20,000,000 ft. gas 5,350-5,400 ft.; total depth 8,539 ft.; shut down; sprayed 50 bbls. gasoline.

(Continued on Page 130)



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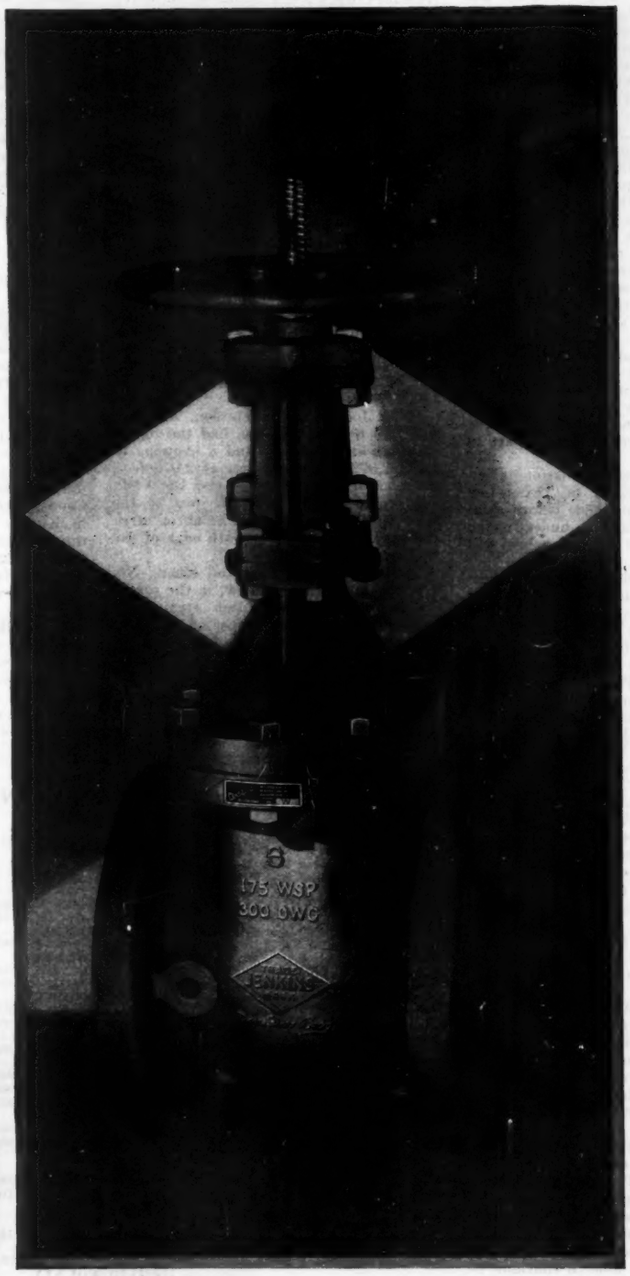

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Big Wells in Kansas Are Kept Shut In

Potential Production of State 52,000 Bbls. in Excess of Actual. Tests Near Pay in Reno. Kansas' Big Gas Area

By W. A. Spinney
Staff Correspondent, Kansas Fields

A number of wells in Kansas with a large potential production are shut in while the State's daily average production of crude oil continues at a steady level. It is estimated that Kansas could produce at least 75,000 bbls. a day more oil from wells now shut in. In the Ritz-Canton area a recent general test of wells indicated that the area has a potential of around 52,000 bbls. a day while the allowable is around 6,400 bbls. a day. The Raymond Pool, in Rice County, has an estimated potential of 15,000 bbls. a day, and wells recently completed, located on the Ellsworth Arch in Ellsworth, western Rice and northeastern Stafford Counties, have a potential of 15,000 bbls. a day. The State's estimated daily average for the week ending April 18 was 109,850 bbls., an increase of 700 bbls. over the previous week.

The Kansas Public Service Commission, which has charge of the enforcement of oil proration in the State after June 1, announced that its policy of regulation of the oil and gas in the State would be slow and cautious, and that it would not enforce any more regulations than were absolutely necessary.

The chairman of the commission outlined the commission's policy in announcing the postponement of a series of conferences with oil producers in the State, which had been set for the month of April. He said the conferences would be held before the law becomes effective, which will be upon the publication of the session laws some time in latter part of May.

The Public Service Commission is expected to make a study of Texas and Oklahoma proration methods before making rules and regulations under which the terms of the new proration law will be enforced.

The commission believes it is not necessary to hold meetings at the present time as the State is not overproducing and there is no work for the commission to do and it would be futile to conduct a conference at this time.

Tests Near Pay in Reno

In northeastern Reno County two tests are expected to reach the pay horizon in a few days. McPherson Oil & Gas Co.'s No. 1 Goering, NW cor. SE, Section 1-23-4w, was fishing at 2,850 feet, and Derby Oil Co.'s No. 1 Goering, SW cor. NW NE, Section 1-23-4w, was drilling at 3,250 feet. The discovery well, Study, Turner and others' No. 1 Haury was completed and shut in for 25,000,000 feet of gas from the chat. The same operators completed the north offset to the discovery well, for a combination well, for 350 bbls. of oil and 7,000,000 feet of gas, from chat at 3,254-64 feet. The gas is decreasing and the well is believed to be now making around 200 bbls. of oil a day.

Another wildcat test in western Sumner County was Sumner Oil & Gas Co.'s No. 1 Porter, NE cor. SW, Section 12-33-4w. The test was expected to spud in a few days. It was located about 12 miles north and 5 miles west of Caldwell.

Provision for Old Wells

During the week the agreement between the Prairie Oil & Gas Co. and the Standard Oil Co. of Indiana, under which the Prairie Pipe Line Co. was running 6,000 bbls. a day from stripper wells in eastern Kansas, came to an end. Up to April 15, under the new orders and arrangements made with the Prairie, that company will be able to continue to handle, for the time being, the relief outlet for these stripper wells to the extent of 4,250 bbls. of the original 6,000 bbls. it had been taking for the Standard Oil Co. of Indiana. It was stated that the continuation and partial relief has been made possible through orders placed with the Prairie by the Standard Oil Co. of Indiana, Sinclair Refining Co., Cities Service Co., Phillips Petroleum Co. and Skelly Oil Co. The Prairie Oil & Gas Co. will extend its facilities and service for additional amount of Kansas stripper oil when additional orders for this purpose are placed with it.

Drilling Deeper

The wildcat test on the east side of the Ritz-Canton Field will be drilled to the Silicious lime formation. Derby Petroleum Corp.'s No. 1 Summerfield, C NE SW Section 23-19-1w, found water in the Viola at 3,421 feet and was landing the 6-inch casing to drill deeper.

Several of the recent tests to the chat may be drilled deeper to the lower pay horizons. McPherson Oil & Gas Co. and Shell Petroleum Corp.'s No. 1 B. Decker, C NE Section 11-19-2w, found 30,000,000 feet of gas in the chat at 2,895-2,909 feet, in the Decker gas area. It may be drilled to the lower formations. Madison and others' No. 1 Russell, SE cor. SW Section 24-19-2w, found a showing of oil and water in the chat at 2,970-75 feet, and is preparing to drill deeper.

Mid-Kansas Oil & Gas Co.'s No. 1 Whitright, SW cor. Section 30-19-1w, was rebuilding the rig destroyed by fire and will drill deeper into the chat. The well was estimated to be 10,000,000 feet of gas from the top of the chat at 2,935 feet.

E. F. Jones' No. 1 Peterson, NW cor. SW SW Section 7-20-1w, had the top of the chat at 2,932 feet and a showing of oil at 2,972 feet and water at 2,976 feet, and was drilling deeper to test the Viola horizon at 3,150 feet. The test is the most southern in the Ritz-Canton area and may determine the south edge of the area.

Phillips Petroleum Co. and others' No. 3 Winn, in Section 7-20-1w, in the southern end of the Ritz-Canton area, made approximately 1,000,000 feet of gas from the chat at 2,930-60 feet and was drilling deeper around 3,150 feet.

"Deep" Test in Shallow Area

A new wildcat test was announced for eastern Kansas on a 1,500-acre block of leases in Bourbon County. Van Arsdale, Jacobs, Nelson and Stover's No. 1 Snyder, in Section 6-24-24, was preparing to spud. The test is in search of gas which is found in the vicinity at approximately 600 feet in the Mississippi lime.

Another wildcat in the western part of the State was showing oil in the conglomerate. Gypsy Oil Co.'s No. 1 Coleman, C SW NE Section 25-17-25w, Ness County, filled up 300 feet with oil from the conglomerate at 4,353-74 feet. The showing was not considered commercial and the test was drilling deeper at 4,410 feet.

Gas is found in 12 of the 14 southern tier counties of Kansas. The only two counties yet without gas production are Harper and Comanche. Starting at the southeastern corner of the State, and going westward, Cherokee, Labette, Montgomery, Chautauqua, Cowley, Sumner, Barber, Clark, Meade, Seward, Stevens and Morton Counties are all producing natural gas in commercial quantities for domestic and industrial consumption.

Stevens and Morton Counties are the latest to produce gas, and this area has helped to develop the largest gas producing field in the State, known as the Hugoton Field. The gas is found in the Colorado shale from 2,500 to 2,850 feet deep. About 125 wells have been completed in the two counties and every test drilled has found gas.

Gas is found in Cherokee County, at approximately 800 feet, in Barber County at depths from 3,300 feet to 3,500 feet. The deepest gas in the State is found in Clark County below 5,000 feet. Barber County fields are supplying gas to towns in Kansas and Oklahoma and some of the wells are to be connected to the interstate pipe lines which are under construction from the Texas Panhandle and southwestern Kansas to cities in the Middle West.

Supplies Middle Western Cities

The gas from the Hugoton Field, which includes Stevens, Morton, Stanton and Grant Counties in Kansas, and Texas County in Oklahoma, will be principally used in middle western cities which will be supplied by the several interstate pipe lines now under construction. Considerable new work is expected to be started in the southwestern gas field in the next few months as a larger supply of gas will be needed when the interstate pipe lines are completed.

Sedgwick County

Sedgwick County's 193 wells averaged 17,370 bbls. of oil for the week ending April 17. The Valley Center Pool averaged 7,185 bbls. from 107 wells, Eastborough Pool, 6,520 bbls. from 40 wells; Greenwich Pool, 3,110 bbls. from 31 wells; Robbins Pool, 275 bbls. from nine wells; Goodrich Pool, 210 bbls. from three wells, and three scattered wells made 75 bbls.

In an attempt to extend the Eastborough Pool to the northeast Glodstine and others' No. 1 Rounds, NE cor., Section 17-27-2, found water in the chat at 2,953-59 feet, and drilling has been temporarily suspended. The test is located about a mile northeast of the nearest production.

Magnolia Petroleum Co.'s No. 4 Wheeler, NW cor. SE NE, Section 19-27-2, in Eastborough Pool, Sedgwick County, is pumping 765 bbls. of oil from the chat at 2,943-58 feet, which is larger than was first estimated. The Derby Oil Co.'s No. 5 Eastborough, NE cor. SW NE, Section 19-27-2, is moving in. The test is the west offset to the Magnolia Petroleum Co.'s well.

A new wildcat test was announced for Chase County, Bordner and Rich's No. 1 Atkinson, NE cor. SW, Section 18-18-7, in the northwest part of the county. It is the first wildcat test to be announced for the county this year. It is located north of the Lipps gas field, which produces from the 1,200-foot formation.

New tests were announced for Sumner County. Blackwell Petroleum Co. and others' No. 2 Rex, NW cor. SE, Section 22-33-3w, was preparing to rig up. It is located about 9 miles northwest of Caldwell. Sumner Oil & Gas Co.'s No. 1 Porter, NE cor. SW, Section 12-33-4w, have completed a rig. The test is located 1½ miles west and south of another wildcat test some time ago which had a showing of oil in the Wilcox sand at 4,447 feet.

Butler County

Magnolia Petroleum Co.'s No. 65 Koogler, SE cor. SW NW, Section 21-26-5, has been completed for 50 bbls. in Viola lime 2,474-2,537 feet.

Ellsworth County

J. A. Aylewarde and others' No. 1 Stratman, SE cor. NW SE, Section 1-17-10w, topped Silicious lime at 3,255 feet, drilled to 3,271 feet and swabbed 90 bbls. the first hour and 117½ bbls. the second hour and was then shut in.

Greenwood County

Braden and others' No. 1 Souder, SW cor. NE SE, Section 13-23-12, has been abandoned at 1,715 feet.

McPherson County

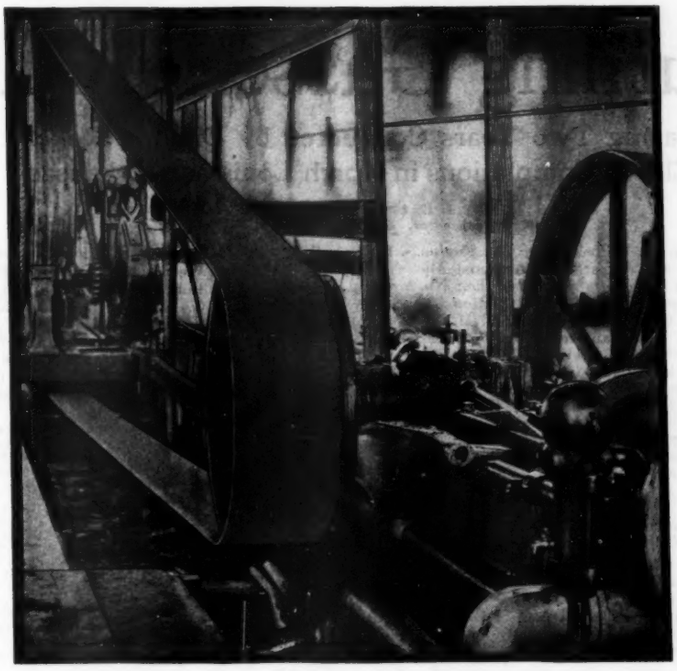
Emrick and others' No. 1 Sevetor, NW cor. SE SE, Section 9-19-2w, is a rig under construction. McPherson Oil & Gas Development Co. and Shell Petroleum Corp. made location for No. 3 Decker, C SE NE, Section 11-19-2w. Location has been made for No. 2 Meyers, C NW SE, Section 14-19-2w. Shell Petroleum Corp. and Olsen staked location for No. 2 Johnson, SE cor. SW NE, Section 36-19-2w. C. B. Davis has the rig timbers on the ground for No. 2 Ritz, SW cor. SE SW, Section 19-19-1w. Plains Oil Co. and Shell Petroleum Corp. made location for No. 1 Unruh, NW cor. NE, Section 6-20-1w. No. 2 Unruh is a location, SW cor. NW NE, Section 6-20-1w. McPherson Oil & Gas Development Co. and Shell Petroleum Corp.'s No. 1 Decker, C NE, Section 11-19-2w,

(Continued on Page 103)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Syndicate Oil Co.'s No. 1 Boertz, NW SE SE Sec. 13-18-12w	Landing 10-in. csg. 1,954 ft.
Skelton Oil Co.'s No. 1 Ott, C SE SE Sec. 16-19-14w	Shut down 2,065 ft.
McCool et al's No. 1 Tsern, NW SE NE Sec. 12-20-11w	Shut down 1,600 ft.
CLAY COUNTY	
Crystal Oil et al's No. 1 Tivier, SW cor. Sec. 19-8-2	Shut down 2,390 ft.
COFFEY COUNTY	
Heyburg's No. 1 Kroft, SE SW SE Sec. 30-22-14	Shut down 1,300 ft.
Roberts et al's No. 1 Hay, SW SE NW Sec. 32-22-15	Shut down 1,250 ft.
COWLEY COUNTY	
Fisher et al's No. 1 Hurt, C SW SE SE Sec. 11-34-3	Rig.
Roth & Farout's No. 1 Reedy, SW NW NE Sec. 3-32-5	Shut down 1,040 ft.
DICKINSON COUNTY	
Severs et al's No. 1 Lavengood, NE SW Sec. 13-13-2	Shut down 3,850 ft.
ELLSWORTH COUNTY	
Gilmore Oil et al's No. 1 Sturm, NW SW Sec. 31-17-9w	Shut down 2,445 ft.
Hershey et al's No. 1 Schultz, C NE Sec. 9-14-8w	Shut down 400 ft.
Alyward et al's No. 1 Stratman, SE NW SE Sec. 1-17-10w	Silicious 3,255-66 ft.; swabbed 539 bbls. 10 hrs.
Aladdin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w	Shut down 1,130 ft.
Milton et al's No. 1 Koster, SE NE Sec. 6-14-9w	Shut down 1,476 ft.; making 2,000,000 ft. gas.
FORD COUNTY	
Carter Oil Co.'s No. 1 Everett, C NE Sec. 22-29-21w	Drlg. 1,590 ft.
Swain et al's No. 1 Taylor, C NW Sec. 21-25-24w	Drlg. 4,730 ft.
GRAHAM COUNTY	
Schleimeyer et al's No. 1 Clark, SW NE NE Sec. 11-9-25w	10-in. csg 4,040 ft.; shut down.
HARPER COUNTY	
Beeler et al's No. 1 Bear, C NE Sec. 21-36-6w	Shut down 1,830 ft.
HARVEY COUNTY	
Empire-Shell's No. 1 Showalter, NW SE Sec. 23-23-2w	Drlg. 3,018 ft.; show oil and water.
KINGMAN COUNTY	
Skelly Oil's No. 1 Miles, NE cor. Sec. 30-27-10w	1,635-40 ft. 2,000,000 ft. gas; at 2,005-20 ft. 6,000,000 ft. gas; at 2,133-42 ft. 3,000,000 ft. gas; showing oil 3,385 ft.; T. D. 3,441 ft.; S. D.; estimated at 600 bbls. a day.



Section of Goodyear Compass (cord) Oil-Well Belt showing cord construction

Section of Goodyear Thor (Fabric) Oil Well Belt, seamless, showing ply construction and covering envelope

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Goodyear Belting for oil field service is designed to take shocks which break apart ordinary belting. The Goodyear Compass (Cord) Oil Well Belt (made endless up to 125 feet) absorbs the intermittent blows of the beam by a structure of heavy cords housed in a stout envelope. It is the most nearly stretchless belt made. Goodyear Thor (Fabric) Oil Well Belts, seamless*, are made of heavy silver duck and are likewise guarded with a covering envelope. Both Compass (Cord) and Thor (Fabric) Oil Well Belts are designed specifically for the heavy shock loads of oil field service. Goodyear Belts stay at work longer. They save high replacement costs.

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**Goodyear Thor Belting, seamless, is made in widths up to and including 16"—Thor quality of special construction is available for larger sizes.*

THE GREATEST NAME IN RUBBER

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Control Burning Gasser in Richland

Well Blazing Two Years Conquered by Drilling Relief Wells. Eleven Completions in North Louisiana-Arkansas

By J. B. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 20.—A development of vast economic importance in the conservation of natural gas in North Louisiana was the final subduing of Arkansas-Louisiana Pipe Line Co.'s flaming gasser at Alto, No. 1-C Thomason, Section 21-16-6, Richland Parish. This well, brought in over two years ago, started forming a crater within 48 hours which was soon 300 feet in diameter. Thirty days later the gas ignited and with the exception of a short period thereafter when it extinguished itself voluntarily, has been a seething inferno. The well was conquered by drilling four relief wells, the last of which, the No. 5-C Thomason was brought in this week, a 30,000,000-foot gasser. This well, together with the Nos. 3-C and 4-C, was allowed to blow wide open, reducing the rock pressure sufficiently until the wild gasser gradually subsided. The program for subduing the well was formulated several months ago with Paul Weeks of the Arkansas Natural Gas Co. in charge, assisted by W. H. Meares. Capt. R. P. Webb of the Louisiana conservation department and R. B. Hill and R. E. Heithecker of the United States Bureau of Mines were present when the task was completed.

Completed Wells

Of the 11 completions reported in the North Louisiana-Arkansas division, 2 were listed as oil wells, with 1 gasser and 9 dry holes. The Ohio Oil Co. in the Champagnolle Field, Union County, Arkansas, registered a producer when they completed their No. 3 Furlough, Section 12-17-14. The well made 719 bbls. the first 14 hours and then quit flowing. The crew is waiting for standard rig to put the well on the pump. The Jordon Drilling Co. in Sabine Parish, had a good show of oil in its No. 1 Louisiana Long Leaf Lumber Co. at 2,510 feet, but not enough to produce. It was drilled to 2,600 feet where it was bailed, and the well is flowing by heads at the rate of 300 bbls. per day. Sabine also turned in three dry holes and one abandoned location. John Henry Oil & Gas Co.'s No. 3 Cook Land Co., Section 34-10-12, was dry at 3,250 feet, and Abner Jones and others abandoned their No. 1 Ferguson at 2,528 feet in Section 33-8-12. It is also reported that H. H. Alvord, Jr., has abandoned his No. 2 Sabine Lumber Co., Section 1-7-12, in the chalk rock at 2,600 feet. This test is one-fourth of a mile due east of Pelican Natural Gas Co.'s No. 1-A Sabine, a large Zwolle gusher. A failure in the recent new gas area in Concordia Parish was United Gas Public Service Co.'s No. 1 Miller & Smith, Section 33-8-9, which encountered salt water and was abandoned at 1,504 feet. In Tensas Parish, Seip and others found their No. 1 Fowler, Section 10-10-10, dry at 1,077 feet.

East Texas Wildcats

The Sinclair Oil & Gas Co. registered two failures in wildcat areas of East Texas counties. Its No. 1 Cora L. Davenport, John B. Morton Survey, in Harrison County, was found dry and abandoned at 3,735 feet. No. 1 Wright, Jacob Grover Survey, in Marion County, checked high, missing the Woodbine sand entirely, and was abandoned at 3,460 feet. The Corona Petroleum Co. in No. 1 Bohler, S. F. Sparks Survey, Harrison County, also checked high, coring the Georgetown lime at 2,812 feet, with a surface elevation of 317 feet. The crew has been ordered to continue to the contract depth of 3,300 feet before abandoning the test. No. 1 Bohler is farther east than any other recent test in that county and is the sixth failure for Harrison.

Several tests in Cass County are nearing the deadline, among them being S. D. Hunter's No. 1 Marshall Felkner, John L. Chambers Survey, which is drilling at 3,305 feet in shale. C. E. Murdock is coring shale at 3,200 feet on his No. 1 First National Bank, Evans Watson Survey. Davis & Pigg spudded in recently on No. 1 Roy Bryan, A. H. Latimer Survey, and are drilling at 1,150 feet.

The two deep tests in Panola County are progressing. Arkansas-Louisiana Pipe Line Co. has set 7-inch casing at 4,650 feet in No. 13 Louis Werner and The Texas Company is drilling in lime at 3,315 feet in No. 2 G. W. Brumble. Panola County is to have another deep test when Moses & Wallace spud in for a 5,000-foot test on the Isabel Hanks Survey, location has been made and operations will start immediately.

H. R. Sweatman has assembled a block in Shelby County consisting of 6,000 acres, location to be made near the center of the Nathan Davis headright survey. The test is to be carried to the 4,000-foot depth, and operations will begin within 90 days from April 15, 1931.

Mississippi Drilling Operations

Operations in Mississippi continue unabated with 15 or more rigs active in the State and as many others temporarily shut down or making locations. Two dry holes were reported from this section during the week with Milstein Oil & Gas Co. abandoning its No. 1 Gammill & Hartfield, Section 6-5-2, Rankin County, at 2,501 feet, and the Pocahontas Natural Gas Co.'s No. 1 Adams-Banks Lumber Co., Section 10-3-7, in Smith County, a duster at 3,519 feet. Several wildcats are below the 3,000-foot level, among them being Ohio Oil Co.'s No. 1 Cantrell, Section 16-15-5, in Clay County, and the Gulf Refining Co.'s No. 1 Box, Section 11-2-15, in Clark County. Others that are getting to interesting depths are Mississippi Drilling Co. on its No. 1 Scarborough, Section 15-13-14, Winston County, and Collett-Carter Oil Co. in Yalobusha County on the Blackmur tract, in Section 14-11-12.

Daily Average Runs

The fields showed a net increase of 75 bbls. daily in pipe line runs last week, due to a 275-bbl. increase in the Zwolle Field while the Arkansas fields were falling off 175 bbls. Daily average runs for the several pools were:

NORTH LOUISIANA

Caddo, light	7,440
Caddo, heavy	2,795
Homer	3,295
Haynesville	5,940
DeSoto-Red River	2,655
Elm Grove	520
Bellevue	570
Cotton Valley	1,745
Urania	4,510
Pleasant Hill	450
Sarepta-Carterville	1,240
Zwolle	7,300
Holly	560
Total North Louisiana	39,020
Previous week	38,770
Increase	250

ARKANSAS

El Dorado	3,685
Smackover, light	4,170
Smackover, heavy	32,120
Stephens	850
Nevada	1,000
Lisbon	770
Champagnolle	3,000
Bradley	50
Urbana	1,350
Total Arkansas	46,995
Previous week	47,170
Decrease	175
Both states	86,015
Previous week	85,940
Increase	75

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

BIENVILLE PARISH

Company, farm and location— Remarks—

Coyle Bros.' No. 1 Lawhon, 300 ft. N, 300 ft. E, SW cor. SE NE, Sec. 15-16-8 — Fishing 1,000 ft. csg; T.D. 2,854 ft.

BOSSIER PARISH

Andrews & Davlin's No. 1 Nattin, 100 ft. N, 250 ft. W, C, Sec. 15-23-14 — Drlg. 2,875 ft.

Flint River Oil Co.'s No. 1 C. L. DeMoss, 200 ft. S and E, NW cor. SE NW, Sec. 23-22-13 — Moving in rig.

Dr. W. N. Hanking' No. 1 Newell, Sec. 13-19-11, 300 ft. S and W of NE cor. section — Rig set up; S.D. clearing title.

Rombaugh et al's No. 1 Allison, SW SE, Sec. 10-19-13 — Arranging to deepen; T.D. 1,600 ft.

CADDO PARISH

Garry M. Gordon's No. 1 Hatcher, 560 ft. E, 600 ft. S, NE cor. NW, Sec. 11-17-15 — Location.

Pelican Nat. Gas Co.'s No. 1 Cooper et al, 1,810 ft. E, 1,064 ft. S, NW cor., Sec. 29-18-14 — Set 12½-in. 1,129 ft.

United Prod. Co.'s No. 1 Emmons, 1,337 ft. E, 660 ft. N, SW cor., Sec. 27-23-16 — Drlg. 5,411 ft.

United Gas Public Service Corp.'s No. 1 Fortner, 330 ft. S, 330 ft. E, NW cor., Sec. 5-22-16 — Drlg. 5,440 ft.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 — Derrick.

Hudson et al's No. 1 Burton, Sec. 35-12-2e — S.D. 2,799 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6 — S.D; W.O. 3,097 ft.

CLAIBORNE PARISH

Baird Bros. et al's No. 1 Whittaker, 600 ft. N, 400 ft. W, SE cor. NE, Sec. 30-20-7 — S.D. 3,000 ft.

CONCORDIA PARISH

Joe Marr et al's No. 1 Maxwell, C, Sec. 35-3n-8e — S.D. 3,622 ft.

United Gas Public Service Corp.'s No. 1 Miller & Smith, 6,461 ft. S, 41° E, 26½ ft. S, 49° W of most northerly cor., Sec. 33-8-9 — Tested S.W. 1,504 ft; abd.

DE SOTO PARISH

Dupree-Fountain's No. 1 J. M. Nabors, 250 ft. S, 350 ft. W, NE cor. NW, Sec. 5-13-11 — Drlg. 2,300 ft.

Keatchie O. & G. Co.'s No. 1 Hallie Smith (was H. E. Weichert's), NE SE, Sec. 31-14-15 — S.D. 2,350 ft.

C. D. Neff et al's No. 1 Ramsey, 1,000 ft. W, 400 ft. S, NE cor. SE, Sec. 33-13-16 — S.D; W.O; bit in hole 2,000 ft.

(Continued on Page 84)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—GREENWOOD

Company, farm and location— Remarks—

Calatex O. & G. Co.'s No. 1 Edgar, 1,460 ft. S, 1,900 ft. E, NW cor., Sec. 17-16-16 — Temporarily abd.

Calatex O. & G. Co.'s No. 1 McAnn-Alfred, 1,310 ft. S, 970 ft. E, NW cor., Sec. 17-16-16 — Location temporarily abd.

CADDO PARISH—OIL CITY

Trio Corp.'s No. 1 Levee Board, 212 ft. S, 500 ft. E, NW cor., Sec. 17-20-15 — Arranging to set 6-in. 2,100 ft.

CADDO PARISH—PINE ISLAND

Haynes Bros.' No. 2 Spell, 956 ft. W, 200 ft. N, SE cor. SE, Sec. 15-21-15 — S.D. 3,962 ft.

Shreveport Oil Corp.'s No. 3 Hicks, 600 ft. S, 300 ft. E, NW cor., Sec. 32-21-15 — Hole full fluid 1,600 ft; W.O.S.R.

Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15 — Set 10-in. 150 ft; S.D.

MOREHOUSE PARISH

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 2-20-4 — Location.

OUACHITA PARISH

Jordan Drlg. Co.'s No. 7 Cole, 265 ft. S, 1,459 ft. W, NE cor., Sec. 49, in Sec. 50-18-4 — Location.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 — Location.

RICHLAND PARISH

Ark.-La. P. L. Co.'s No. 5-C Thomason, 350 ft. S, 217 ft. E, SW cor. NE NE, Sec. 21-16-6e — Gas; blowing open; to kill old crater.

Hope Prod. Co.'s No. 2 C. M. Noble Hrs., 2,838 ft. W, 1,980 ft. S, NE cor. SE, Sec. 36-16-5 — Location.

Palmer Corp.'s No. 1 Clement, 3,960 ft. N, 1,320 ft. E, SW cor., Sec. 10-16-6 — Derrick.

Richland Operating Co.'s No. 1 Cooper, 600 ft. N, 600 ft. W, SE cor., Sec. 13-16-6 — Completed Apr. 1; 39,519,000 ft. gas 2,400 ft.

Southern Carbon Co.'s No. 1 J. O'Neal, 660 ft. N, 760 ft. E, SW cor., Sec. 36-17-6e — Drlg. 1,675 ft.

Southern Carbon Co.'s No. 2-B Thomason, 1,980 ft. S, 2,080 ft. W, NE cor., Sec. 23-16-6 — Waiting on cmt. 2,285 ft.

United Carbon Co.'s No. 1 Mann, 1,320 ft. S, 1,921 ft. W, NE cor., Sec. 12-16-5e — Drlg. 1,948 ft.

United Carbon Co.'s No. 2 Cooper, 660 ft. N, 3,551 ft. E, SW cor., Sec. 13-16-6 — Location.

SABINE PARISH—ZWOLLE

W. M. Coats' No. 3 Sabine Lbr. Co., SW cor. SW NW, Sec. 1-7-12 — Set 6-in. 2,232 ft.

Hawkins et al's No. 1 Byrd, Sec. 1-7-11 — Rig up.

O. A. Gautier et al's No. 1 Mischell, 330 ft. E, 150 ft. N, SW cor. SE NW, Sec. 30-8-12 — S.D. 1,230 ft.

Ab Jones et al's No. 1 Ferguson, 330 ft. N, 330 ft. W, SE cor. NE SW, Sec. 33-8-12 — Dry and abd. 2,528 ft.

Jordon Drlg. Co.'s No. 1 La. Long Leaf Lbr. Co., 660 ft. N, 247 ft. W, SE cor. SW SE, Sec. 3-7-11 — Dry and abd. 2,510 ft.

Lyons & Neely's No. 1 Baird Co., Sec. 1-7-11 — Began drlg. Apr. 9; set 10-in. 100 ft; drlg. 400 ft.

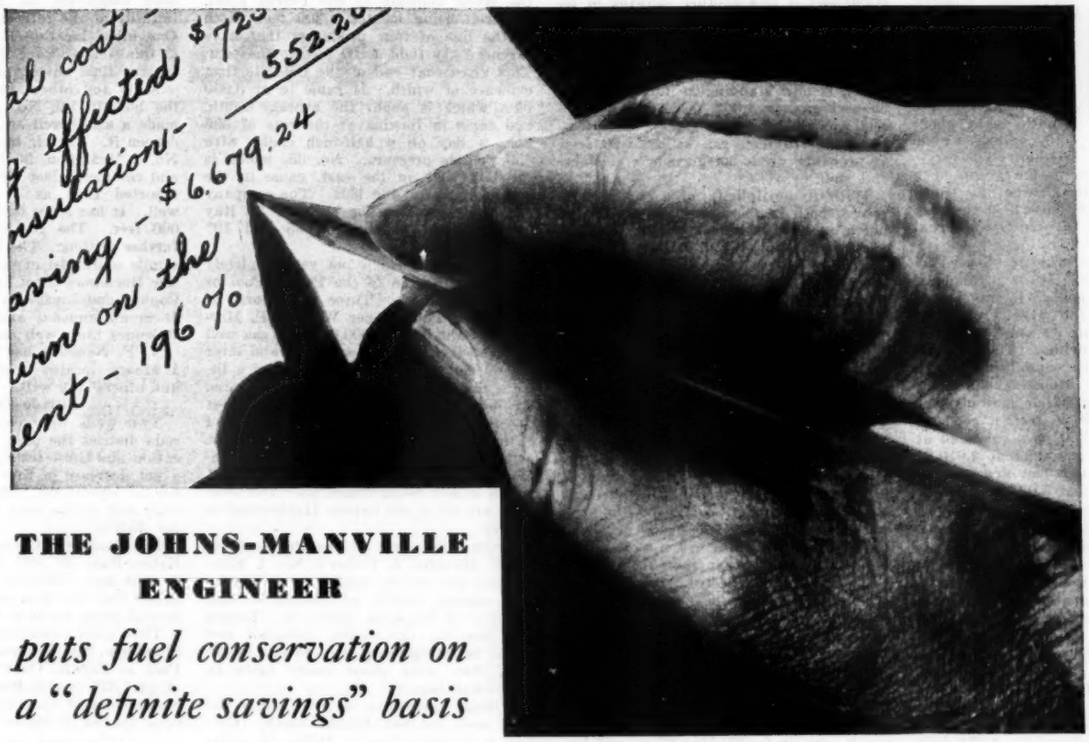
H. H. Alvord, Jr.'s No. 1 Sabine Lbr. Co., 330 ft. N, 165 ft. E, SW cor. NE, Sec. 1-7-12 — Location.

H. H. Alvord, Jr.'s No. 2 Sabine Lbr. Co., 330 ft. S, 250 ft. E, NW cor. SW NE, Sec. 1-7-12 — Tested dry 2,600 ft; W.O.

Ohio Oil Co.'s No. 3 Bowman-Hicks, 330 ft. N, 330 ft. E, NW cor. NE, Sec. 2-7-12 — Begand drlg. Apr. 9; set 10-in. 199 ft; drlg. 1,100 ft.

(Continued on Page 102)

this one man talks INSULATION *in exact figures*



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Another Pool in Corpus Christi Area?

Aransas Oil Co.'s No. 1 Welder Tests Gas in San Patricio County and Will Be Drilled in This Week. Pettus Field Extended

By B. D. Stevenson
Fort Worth Bureau, The Oil and Gas Journal

SAN ANTONIO, Tex., Apr. 20.—Another field in the Corpus Christi area was in the travail of birth over the last week-end. The test is the Aransas Oil Co.'s No. 1 Welder, in San Patricio County, about half way between the Refugio Field on the north and the White Point and Saxet Fields on the south, being about 15 miles from either.

It adds one more to the group of a baker's dozen scattered over the south part of the State and shown in the map on Page 22 of The Oil and Gas Journal of April 16.

The Welder ranch was first leased by William F. Morgan. It is a ranch of many thousands of acres. It was turned to the Houston Gulf Gas Co. which drilled four tests on it, some of which had pretty good showings. The Aransas Oil Co.'s No. 1 Welder is only about two locations from the Houston Gulf Gas Co.'s No. 3 Welder which showed some oil and gas at 3,650-56 feet, a good oil and gas show at 4,380 feet, gas sand at 4,570 feet, oil and gas sand at 4,610-20 feet, oil sand at 4,680 feet and was finally abandoned dry at 5,077 feet.

Aransas Oil Co.'s No. 1 Welder at 3,653-63 feet had a gas sand that tested 825 pounds pressure on drill stem test and has set casing above the sand. It will drill in within the next few days.

That there is a possibility of another good producing area midway between Refugio and White Point is indicated by the showings in the other tests. The Houston Gulf Gas Co.'s No. 1 Welder, located 3 miles southeast of the Aransas Oil Co.'s test, was abandoned at 3,012 feet. The No. 2 Welder, located 2 miles northeast, was abandoned at 3,372 feet. It had a little showing of gas at 3,111 feet. No. 4 Welder, 2 miles south of the Aransas Oil Co.'s test, was abandoned at 6,026 feet. It showed some oil at 4,607-10 feet, more oil at 4,636-51 feet; at 5,762 feet on drill stem test it showed 53 fourbles of salt water and oil, 25 per cent of it oil of 51 gravity. At 5,780 feet it had another showing of oil and salt water.

Pickett's Deep Test

George B. Pickett drilled a test 3½ miles south of the Aransas Oil Co.'s test which is now standing at 4,010 feet. It showed gas at 1,902 feet, oil at 2,476 feet, gas at 2,480 feet, gas at 2,563 feet, gas at 3,370 feet, gas at 3,811-20 feet. It probably would have made a commercial well.

With a multiplicity of sands already proven both in the Refugio Field on the north, which has been a prolific yielding pool, and in the White Point and Saxet Fields on the south, the threat of another pool between them and the probability that the geology is similar becomes a major occurrence.

Saxet Field in Nueces

The Saxet Field in Nueces County which last week threatened, in the 4,000-foot sand, to spread over a territory of 4½ miles east and west, has carried out its threat. There are now six wells lying to the west of the original Saxet gas field, four of these being pretty closely grouped, to which add the discovery well in that sand a mile to the east and O. C. Best's No. 1 Boory, completed the past week for 40,000,000 feet of gas at 4,037 feet, located 3½ miles to the west. It is far enough away that there is a possibility it is not connected with the other production.

The Moody-Seagraves' No. 1 Sedwick, also completed last week, started off with 70 bbls. of oil and about 300 bbls. of water but with the oil production probably increasing. Total depth is 4,097 feet. It is a little over a half mile north of the same company's No. 1 Smith, which came in for 60 bbls. of oil and 40,000,000 feet of gas at 4,082 feet. These two wells give the field its width, with the Houston Oil Co.'s No. 1 Joe Hunter, a 200-bbl. oil well at 4,079 feet and Houston Oil Co.'s No. 2 Rand Morgan, a 25-bbl. oil well at 4,095 feet in between.

Pettus Field in Bee County

United Production Co.'s No. 36 Ray is the latest addition to the Pettus Field, the well being located 1,300 feet north of the line of four producers that have extended the field 4,100 feet to the east. This gives that end of the field its first evidence of width. It came in at 3,940 feet, which is about the average depth, and came in flowing at the rate of 335 bbls. a day on a half-inch choke with 350 pounds pressure. No. 35, which is the last well on the east, came in the week before for 480 bbls. The company has made location for the No. 38 Ray 900 feet east of the No. 35 and 10° south.

The Pettus Field is not yet completely outlined either as to the Pettus Pool or as to other areas. Three miles north of the Pettus Pool proper William F. Morgan brought in a 20,000,000-foot gas well at 3,680 feet, making some oil, and later the oil content of the gas increased a little. The deal was turned to the United Production Co. which drilled another test to the same depth and got more oil and a third test was a dry hole. Now the owners are going to drill No. 2 McKinney, a location made months ago but which is now being rigged up. The locations are all in the George Habbermacher Survey.

Seven miles west of the Pettus Field where Mauldin & Fisher's No. 1 Kimball has been in the sand for some weeks the company finally got casing set and the first of the week drilled in. Tubing was run but the tubing collapsed and had to be straightened out and late in the week they were about ready again to start swabbing.

Wildcat operations in Bee County the past week did not disclose much. Catlett & O'Neil's No. 1 Miller, 8 miles west of Beeville and about 20 miles southwest of Pettus, at 3,823-31 feet had a sand that tested 1,500 feet of salt water and a little trace of oil. It is now down nearly 4,000 feet.

Darst Creek Producer

Humble Oil & Refining Co.'s No. 24-A Denman in the Darst Creek Field has been completed at 2,577 feet flowing initially at the rate of 600 bbls. per day. One other location is listed in the field at this time and one test drilling, activity in that field having nearly ceased.

Mills and others have gone back into the hole in the No. 1 McMahon which made a small well at 2,185 feet and will deepen it. The rig has been used to drill No. 2 McMahon, 50 feet from the other and completed last week at 976 feet and reported first as a 2,000,000-foot gas well. It has since been gauged at 9,000,000 feet. The gas will be used to do further drilling. The two wells are about a mile southwest of nearest production in the Buchanan Pool in eastern Caldwell County and southwest of the Dale Pool. It is an unusual amount of gas for a Balcones fault well east of San Antonio.

V. F. Neuhaus has abandoned his No. 1 Moore, located a mile north of Mills and others' gas well.

Laredo District

Two wells were completed in the Laredo district the past week; one new location and three tests abandoned, making a net decrease of four in the total number of operations. Zapata County has fully half of the tests that are drilling in the district.

Los Olmos Oil Co. completed the No. 3 Kelsey-Bass at 407 feet for 3,000,000 feet of gas. This is the third shallow gasser that has been completed at a point several miles north of Rio Grande City.

The other completion was W. R. Shankle's No. 3 Garza in the Escobas Pool in Zapata County for 20 bbls. of oil at 1,376 feet in Block 10 of the Zorro Subdivision of the Comitas grant. This is at the south end of the Escobas area,

(Continued on Page 103)

SOUTHWEST TEXAS PROVEN AREAS

DOBBOWOLSKI POOL—BEXAR COUNTY

Company, farm and location— Remarks:

Morgan Bros.' No. 3 Masterson, 300 ft. S of No. 2 Masterson, Miguel Gortaris Sur. ..... T. D. 550 ft.; set csg.
Collins and Morris' No. 10 Halberdier, J. M. F. Peres Sur. ..... T. D. 410 ft.; drlg.
Boling & Michael's No. 1 Adams, Miguel Gortaris Sur. .. T. D. 700 ft.; (W.O.).
W. S. Rogers et al's No. 1 L. Donnop, Juan Montez Sur. ..... T. D. 400 ft.; shut down.
A. J. Swearingen's No. 6 Sandemer, 600 ft. S of No. 1, M. Manchaca Sur. ..... Location.
A. J. Swearingen's No. 7 Sandemer, 300 ft. S of No. 6, M. Manchaca Sur. ..... Location.

BRUNER POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, A. Floyd Sur. ..... T. D. 50 ft.; spudded and shut down.

EDDINGTON POOL—FALLS COUNTY

Eddington et al's No. 3 Llewellyn, George Allen Sur. .... T. D. 610 ft.; drlg. shale.

DARST CREEK FIELD—GUADALUPE COUNTY

Humble Oil & Ref. Co.'s No. 24-A Denman ..... T. D. 2,577 ft.; comp. 600 bbls.
W. R. Posey's No. 1 Knodle, J. R. Robinson Sur. ..... Rigging up.

CHAPMAN POOL—WILLIAMSON COUNTY

Chapman et al's No. 2 Lawrence, S. Miller Sur. ..... Derrick.
Vitex Oil Co.'s No. 8 Kilgore, Simon Miller Sur. ..... T. D. 1,735 ft.; waiting on cement.

PETTUS AREA—BEE COUNTY

J. L. Mauldin's No. 1 fee, 1,300 ft. N of S line, 150 ft. E of Medio Creek, Kerr Sur. ..... T. D. 3,874 ft.; waiting on cement.
Gulf Coast Oil Co.'s No. 3 McKinney, 2,400 ft. to E and 150 ft. to S line of tract ..... Rigging up.
United Prod. Co.'s No. 32 Ray, G. Habbermacher Sur. .... T. D. 3,925 ft.; drlg.
United Prod. Co.'s No. 33 Ray ..... T. D. 3,898 ft.; topped sand; set csg.
United Prod. Co.'s No. 35 Ray, 1,100 ft. E of No. 34, T. Hanson Sur. ..... T. D. 3,965 ft.; comp. 480 bbls.
United Prod. Co.'s No. 36 Ray, Thomas Hanson Sur. ..... T. D. 3,940 ft.; comp. 335 bbls.

SLICK POOL—GOLIAD COUNTY

Slick estate's No. 1 Riedel, W. C. Brown Sur., 1,630 ft. E of No. 1 Poetter ..... T. D. 4,390 ft.; drlg. and coring.

LASATER POOL—BROOKS COUNTY

Houston Oil Co.'s No. 3 Wormser, Maguella Sur. ..... T. D. 4,702 ft.; drlg.

CARTWRIGHT POOL—LIVE OAK COUNTY

Houston Oil Co.'s No. 3 Dunning, M. B. Kilvin Sur. ..... Moving in rig.
Houston Oil Co.'s No. 4 B. L. and C. C. ..... T. D. 5,686 ft.; reaming.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities Co.'s No. 6 Chittim, Sec. 116, Blk. 7, I.&G.N. Sur. ..... T. D. 5,521 ft.; set csg.; testing.

(Continued on Page 102)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Company, farm and location— Remarks:

Cullen and Bender's No. 1 Medina Irrigation, W. Klemke Sur. No. 439 ..... T. D. 2,987 ft.; abnd.
Pacific Oil & Gas Co.'s No. 1 Harris, G. Van Norman Sur. ..... T. D. 795 ft.; standing.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan ..... T. D. 720 ft.; drlg.
Liles-Adams et al's No. 1 Stanford, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155 ..... T. D. 970 ft.; to be deepened.
McCleary et al's No. 1 Schenling, 900 ft. to SE line, 600 ft. to S line of J. A. Rouse No. 118 Sur., 4 miles SW from Blanco City ..... T. D. 574 ft.; shut down.
J. R. Meek's No. 1 Walker, 360 rds. from W line, 482 rds. from S line of 375-ac. tract in Sur. No. 32 ..... T. D. 1,025 ft.; resumed drlg.
C. Rosenfield's No. 1 Hohenberger, 800 ft. to W line, 1,250 ft. to N line, Sur. No. 94 ..... T. D. 712 ft.; shut down.

BASTROP COUNTY

Turner-Whorton and Anderson's No. 1 Harris, Joshua Gray Sur. ..... T. D. 2,190 ft.; shut down.

BELL COUNTY

Hartman et al's No. 1 M. E. Reed, Nancy Roberts Sur. .. T. D. 907 ft.; showing oil; shut down.
Mildon Oil Co.'s No. 1 J. K. Edds, Maxiano Moreno Sur.. T. D. 519 ft.; drlg. shale.
O. O. Alford et al's No. 2 F. Spankell, W. Woodford Sur. ..... T. D. 500 ft.; shut down.

BROOKS COUNTY

Ed East's No. 3 B. Garcia, 150 ft. from N and W lines of Blk. 5, Share A-1, Las Mastena y Gonzalene grant ..... T. D. 1,002 ft.; abnd.
The Texas Company's No. 1 Allen, San Antonita grant .. Rigging up.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles south Skidmore.. T. D. 325 ft.; drlg.
Catlell & O'Neill's No. 1 Miller, Ronald Hotchkiss Sur.. T. D. 3,905 ft.; reaming.
Mauldin et al's No. 1 Kimball, 300 ft. S Grayburg's No. 1-A Kimball, S. Winship Sur. ..... T. D. 3,544 ft.; testing.

BEXAR COUNTY

Kaye & Uhl's No. 1 Rhode, C. Texada Sur. No. 133 ..... T. D. 665 ft.; shut down.
Long & Craig's No. 1 Sandemer ..... Location abnd.
J. M. Russell's No. 1 F. L. Price, 1,500 ft. to N line, 660 ft. W of tract in Angel Navarro Sur. .. .. T. D. 1,060 ft.; drlg.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ..... T. D. 702 ft.; shut down.
Russell & Moore's No. 3 Mills, Angel Navarro Sur. No. 5 ..... T. D. 940 ft.; shut down.

(Continued on Page 99)

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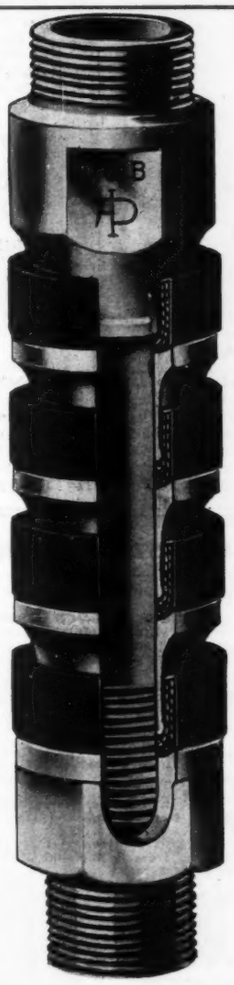

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CONTINENTAL

Gulf Sells Interests on High Island Dome

Believed Yount Lee Oil Co. Will Become Sole Owner. Flank Sand Production on Sorrento Dome. Dry Wildcats in Victoria

By Nell Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 20.—The sale of the entire holdings and property of the Gulf Production Co. in the High Island Field, Galveston County, to Marrs McLean, independent operator of Beaumont, Tex., has been made known here. The deal involves the transfer of between 500 and 600 acres, of which part is undeveloped, and seven producing wells with a daily output of around 400 bbls. Gulf retains an overriding royalty interest in the property.

This transaction follows the recent sale by Marrs McLean of his holdings at High Island to Yount Lee Oil Co. Until that deal Marrs McLean and Gulf Production Co. were the sole operators at that field, the former being on the north and west side of the dome and Gulf on the south and east. It is generally assumed that the purchase by Marrs McLean from the Gulf is for Yount Lee Oil Co., which would give this company control of the entire dome.

In the former deal, Yount Lee Oil Co. acquired from Marrs McLean approximately 1,400 acres with six producing wells, of which two were shut down. For that, a total of $2,500,000 was reported paid of which $600,000 was in cash, the remainder to be paid in oil with an eighth overriding royalty. The amount involved in the sale by Gulf was not made known except that it was less than that in the Yount Lee Oil Co.-Marrs McLean deal.

High Island is one of the older salt domes on the Gulf Coast, but it never has been a prolific producer. At present it is yielding between 500 and 700 bbls. daily, the crude being moved out in tank cars. Not including a number of shallow tests on top the dome not more than 50 tests have been drilled around the dome and there remains considerable acreage undeveloped. Only one rig, Yount Lee Oil Co.'s No. 21 Cade, is drilling at present.

BARBERS HILL INCREASES GULF COAST'S OUTPUT

HOUSTON, Tex., Apr. 20.—Estimated daily average production of Gulf Coast fields for the week ended April 18 totaled 178,698 bbls., an increase of 3,682 bbls. over the preceding week. This gain was due almost entirely to Barbers Hill and Refugio, which caused an increase to be reflected in Texas coastal fields amounting to 5,082 bbls. A decrease in Louisiana fields partly offset the Texas boost. Daily average figures by fields were :

Gulf Coast

Daily average production for week ending April 18:

TEXAS COAST

Allen	18
Barbers Hill	27,911
Batson	961
Big Creek	3,328
Blue Ridge	1,132
Brenham	35
Boling	771
Clay Creek	3,250
Damon	534
DeWalt	11,750
Esperson	3,343
Fannett	436
Goose Creek	4,173
Hankamer	2,419
High Island	534
Hull	6,369
Humble	10,446
Lost Lake	259
Markham	167
Moss Bluff	587
Mykawa	243
Nach	706
North Dayton	694
Orange	1,975
Orchard	1,911
Pierce Junction	7,878
Port Neches	1,463
Raccoon Bend	9,197
Refugio	31,993
Rockland	8
Saratoga	1,049
Sour Lake	2,017
South Liberty	2,264
Spindletop	10,325
West Columbia	4,231
Total Texas Coast	152,367
Week ended April 11	147,285
Increase	5,082

LOUISIANA COAST

Anse La Butte	69
Bayou Blue	67
Bayou Boullion	141
Black Bayou	1,566
Edgerly	402
Jennings	766
Hackberry	3,699
Lake Barre	2,880
Lake Pelto	134
Lockport	4,673
Port Barre	1,720
Sorrento	472
Starks	774
Sulphur	1,751
Sweet Lake	885
Vinton	6,348
White Castle	934
Total Louisiana Coast	26,331
Week ended April 11	27,731
Decrease	1,400
Total Gulf Coast	178,698
Week ended April 11	175,016
Increase	3,682

ADD 2 DEEP SAND WELLS TO EAST REFUGIO FIELD

HOUSTON, Tex., Apr. 20.—Deep sand development on the east side of the Refugio district added two more 6,400-foot wells the past week, these being United Production Corp.'s Nos. 10 and 11 O'Brien. Both, however, are within proven territory. The former is in the sand at 6,448-56 feet and with 18 feet of 5-inch screen in the hole came in flowing 800 bbls. of pipe line oil daily on quarter inch chokes. No. 11, also with 18 feet of screen in the sand at 6,431-43 feet, came in flowing 100 bbls. daily on quarter inch choke.

On the west side of the Refugio area, L. L. Smith has abandoned his No. 2 Rogers, James Power Survey, after testing salt water at 3,640 feet. The hole had been plugged to this sand after drilling to a total depth of 6,510 feet, where it was dry. The test is 400 feet north of No. 1 Rogers, which late in 1930 extended production of Refugio about a mile westward by being completed as a small producer in the 3,700-foot horizon. That well has been the only production in the area.

TWO DRY WILDCATS IN BLOOMINGTON DISTRICT

HOUSTON, Tex., Apr. 20.—Wildcatting in Victoria County received additional set backs the past week with the abandonment of two tests in the Bloomington district, where Lion Oil & Refining Co. late in 1930 completed two gas wells in a 3,700-foot horizon. United Production Corp.'s No. 1-B McFaddin, slightly over a mile to the east of the gas wells, tested salt water at 3,893 feet and was abandoned. Lion's No. 3-A McFaddin, about midway between this test and the gassers, also tested salt water at 3,840 feet and was quit. All are in the Traviesa Survey, in which Lion and United jointly have a large block, the former holding the oil rights and the latter the gas.

T. B. Slick's No. 1 McFaddin, J. Vairan Survey, 2 miles north of the Lion and United wells, has started drilling and promises an interesting test. Also of particular interest is the location made during the week by Simpson-Fell and Westheimer and associates for No. 1 Levi, S.A.&G.H. Survey No. 4, for which a rig is up. The latter is on a small tract in the middle of a large block taken about 60 days ago by Shell Petroleum Corp. following a thorough geological and geophysical exploration of the area. This is about 10 miles north of Bloomington while the Lion and United operations are to the southwest of the town.

BARBERS HILL OUTPUT KEPT UP BY NEW WELLS

HOUSTON, Tex., Apr. 20.—Production of Barbers Hill showed further substantial gains the past week as a reflection of the series of good wells which have and are being brought in during the active development on the west flank of the dome. The completion late in the week of Yount Lee Oil Co.'s No. 2 Winfree added another 1,020 bbls. of flush flow and over the week-end a number of other deep wells in that area were on or nearing the pay horizon whose completions are expected to result in additional material boosts in daily output.

Production in Barbers Hill went as high as 30,237 bbls. one day the past week, which is near the peak reached by the field during the week ending April 5, 1930. Daily average for the past week was only 27,911 bbls., production the first few days being down to 25,000 bbls. Maintenance of production, however, is dependent largely on continuance of completions and when new wells are not brought in the output quickly drops.

Yount Lee Oil Co.'s No. 2 Winfree was completed in sandy shale at a total depth of 5,493 feet with 121 feet of screen in the hole. Pressure is 660 pounds through a three-eighths inch choke. Gravity of the oil is 32 degrees. It was the only completion of the week, excepting Humphreys Corp.'s No. 1 Lula Barber, in the same area, which came in April 12 and was reported previously. Humphreys Corp.'s No. 1 E. H. Winfree, also in the same area, was setting screen over the week-end.

Humphreys Corp. has made location on the north flank of the dome for No. 1 Anna Davis, 475 feet from the north line and 71 feet from the east line of Strip 6, Henry Griffith League. This is an east offset to the same company's No. 1 Louise Fitzgerald, completed several weeks ago flowing 1,600 bbls. daily from sandy shale at 5,240 feet after drilling through salt at 1,401-3,245 feet. This is a new sector of the dome, where at present only two wells are producing.

SORRENTO DOME SHOWS FLANK SAND PRODUCER

HOUSTON, Tex., Apr. 20.—The first flank sand production at the Sorrento Dome, Ascension Parish, Louisiana, was tapped the past week by Gulf Refining Co.'s No. 19 United Land Co., which was completed flowing 300 bbls. of pipe line oil daily from sand at 4,345-51 feet. Since completion it has increased its flow to 600 bbls. daily. The well is on the north side of the dome, located 1,110 feet north and 1,360 feet west of the SE cor. NE, Section 15-10s-4e.

This well had been drilled to a total depth of 4,870 feet in salt topped at 4,848

(Continued on Page 103)

GULF COAST FIELDS AND WILDCATS

Week Ended April 18
All Rotary

BARBERS HILL—CHAMBERS COUNTY

Gulf Production Co.'s No. 1 Wilburn (D.D.), Henry Griffith League, 50 ft. S of C of N line of tract	Pulling screen to deepen 5,210 ft.
Humphreys Corp.'s No. 2 Wilburn, southeast	Cutting and pulling screen 5,130 ft.
Humphreys Corp.'s No. 1 Lula Barber, west flank, W. D. Smith Sur., 50 ft. from N line and 50 ft. from E line of tract	Set screen 5,570 ft.; comp. flowing 2,100 bbls. pipe line oil on ½-in. choke, 600 lbs. pressure.
Humphreys Corp.'s No. 1 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from S line and 75 ft. from W line of tract	Coring sand and shale showing oil 5,359 ft.; 9⅝-in. csg. 5,320 ft.
Humphreys Corp.'s No. 2 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from W line and 478 ft. S line 10-acre tract	Drlg. shale and lime 5,198 ft.
Humphreys Corp.'s No. 3 E. H. Winfree, west flank, W. D. Smith Sur., 264 ft. from S line and 50 ft. from W line of 10-acre tract	Drlg. shale 5,010 ft.
Humphreys Corp.'s No. 4 E. H. Winfree, west flank, W. D. Smith Sur., 50 ft. from W line and 617 ft. from S line 10-acre tract	Drlg. sand and lime 4,285 ft.
Humphreys Corp.'s No. 5 E. H. Winfree, W. D. Smith Sur., 854 ft. from S line and 50 ft. from W line	Spudded.
Humphreys Corp.'s No. 1 Anna Davis, Henry Griffith League, 475 ft. from N line and 71 ft. from E line of Strip 6	Rigging up.
McAlbert Oil Co.'s No. 5 Woodward (workover), Wm. Hodges Sur.	Oil sand 5,391-5,419 ft.; set 26 ft. 3-in. screen; swabbed salt water; abandoned.
Mills Bennett Production Co.'s No. 1 Gulf-Fisher (workover), Wm. Bloodgood Sur., 50 ft. from SW line and 250 ft. from SE line tract	Total depth 4,754 ft.; trying to sidetrack liner.
Mills Bennett Production Co.'s No. 1 Gulf-Smith (workover), W. D. Smith Sur., 50 ft. from S line and 50 ft. from E line tract	Total depth 5,573 ft.; sidetracked and drlg. lime 5,359 ft.
Rio Bravo Oil Co.'s No. 2 Fisher, west flank	Reaming 4,171 ft.
Sinclair Oil & Gas Co.'s No. 2 Smith, W. D. Smith Sur., 50 ft. out of S cor. of tract	Drlg. gumbo 1,886 ft.
Sun Oil Co.'s No. 2 Smith, W. D. Smith Sur., 75 ft. from W line, 50 ft. from N line of tract	Drlg. gumbo 1,852 ft.
Sun Oil Co.'s No. 2 Winfree, W. D. Smith Sur., 450 ft. SE along SW line from NW cor. of tract and 50 ft. NE at right angles	Rig.
Sun Oil Co.'s No. 14 Wilburn fee, east	Drlg. sand and shale 4,162 ft.
The Texas Company's No. 2 Winfree, west flank, W. D. Smith Sur., 264 ft. N, 50 ft. W at right angles out of SE cor. of lease	Drlg. hard sand and shale 4,379 ft.
The Texas Company's No. 3 Winfree, west flank, W. D. Smith Sur., 472 ft. N and 50 ft. W at right angles	Drlg. shale and lime 4,932 ft.
The Texas Company's No. 5 Wilburn, east flank, Wm. Hodges Sur., 400 ft. SW of No. 4 Wilburn and 50 ft. from SE line of lease	Drlg. hard sand 1,270 ft.

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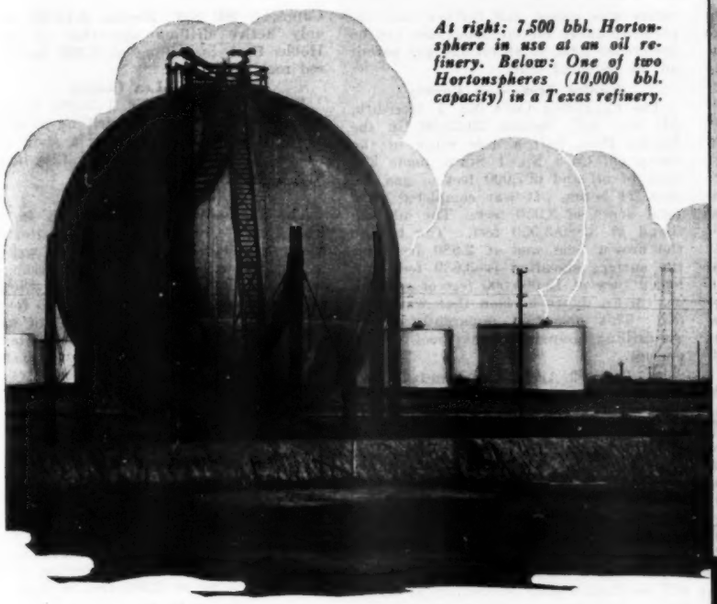
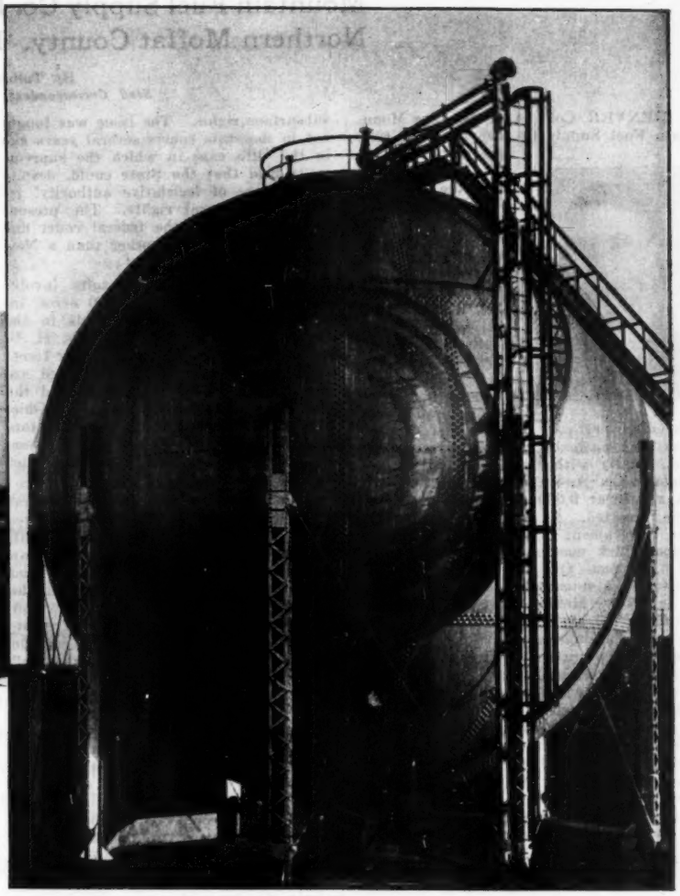


At right: 7,500 bbl. Hortonsphere in use at an oil refinery. Below: One of two Hortonspheres (10,000 bbl. capacity) in a Texas refinery.



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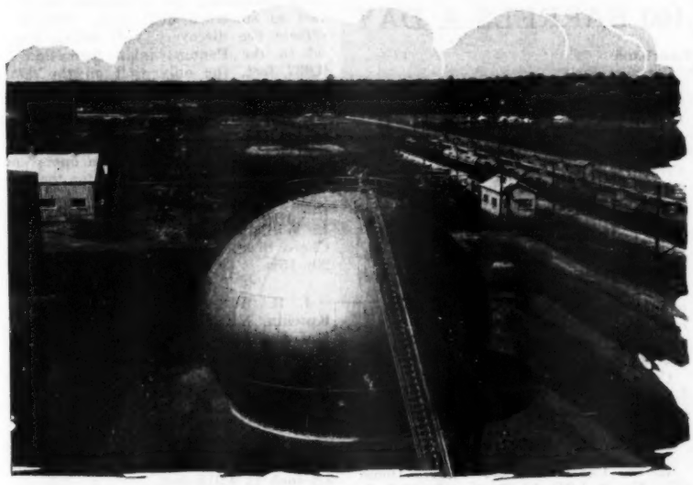

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CHICAGO	2128 Old Colony Bldg.	SEATTLE	4323 Smith Tower
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THE HORTONSPHERE

OGJ 4-23 Gray

New Gas Structure Found in Colorado

Mountain Fuel Supply Co. Has 34,000,000-Foot Gasser in Northern Moffat County. Disagreement in Eunice Pool

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 20.—The Mountain Fuel Supply Co. has opened a new gas structure on the Powder Wash anticline in northern Moffat County, Colorado, in its No. 1 Musser, which gauged 34,000,000 feet the first 24 hours from the Wasatch formation at a total depth of 2,152 feet. First location on the Greasewood Dome in northeastern Colorado since the discovery well came in last October has been made by the Reiter-Foster Oil Co., jointly with the Platte Valley Petroleum Co. An oil show in Park County in a wildcat 9,000 feet above sea level was reported. A well being drilled by the Government in the Mesa Verde National Park encountered sulphur water at 3,400 feet. One new location was reported in Montezuma County.

In New Mexico, operators in the Eunice Pool are reported to have failed to reach an agreement with state officials on a proration program. Hearings are in progress at Santa Fe in litigation involving titles to 185,000 acres of state land in Lea County. The Western Drilling Co.'s No. 1 State in the Caprock area had a show of sulphur water and will plug back. A location for a 2,500-foot test in Santa Fe County was announced.

Reports of an important discovery of oil in the Cut Bank area in Montana lack confirmation.

The Midwest Refining Co.'s test on the Midway Dome in Wyoming is in a white water sand at 6,042 feet. A 10,000,000-foot gas well was completed in Elk Basin and the Producers & Refiners Corp. is preparing to test its Big Sand Draw well which has encountered gas below horizons heretofore drilled.

NEW MEXICO

A meeting of representatives of operators in the Eunice Pool in Lea County was held with State Land Commissioner Hagerman at Santa Fe in an effort to reach an agreement for prorating production from that field. Four wells have been allowed to produce 50 bbls. per day under a temporary agreement that went into effect on April 1, and it is reported that an effort was made to have the allowable outlet raised to 400 to 500 bbls. daily, but that no agreement was reached. The field has eight producers capable of making 3,500 to 4,000 bbls. a day. Three of these belong to the Continental Oil Co. and one each to the Atlantic Oil Producing Co., the California Co., the Tidal Oil Co., the Shell Petroleum Corp. and the Getty Oil Co.

Hearings began the past week at Santa Fe in the federal district court before Judge Colin Neblett in a suit filed on September 24, 1930, by Will N. and Ora B. Terry against the Midwest Refining Co. in which the plaintiffs seek an ouster of the company from their land in Lea County and an accounting for royalties from production and $100,000 damages. This is the first of about a dozen suits filed by purchasers of state land against as many oil companies operating principally in the Hobbs Pool, all of which involve practically the same issue. The Midwest suit is expected to set a precedent for the various actions. The issue involved is whether the State had the right to reserve the oil and minerals on state land sold prior to 1919, in which year the legislature passed an act specifically authorizing the reservation of subsurface rights. The issue was fought out in the state courts several years ago in the Otto case in which the supreme court held that the State could, despite the absence of legislative authority, reserve the mineral rights. The present case was filed in the federal court due to the Midwest being other than a New Mexico corporation.

Altogether the various suits involve title to approximately 185,000 acres, including highly productive tracts in the Hobbs Pool. The W. D. Grimes, H. D. McKinley, Will N. Terry and other tracts upon which wells have been drilled are involved in the various actions and the Humble, Continental, Amerada, Ohio, Shell, Independent and other operators are named defendants. Some of these companies filed counter actions to quiet title to their holdings.

A similar suit, only it involved federal land, was decided by the United States Circuit Court of Appeals for the Tenth District on March 31, in the case of Ivan L. Skeen versus Beulah V. Lynch and others, in which the court confirmed the decision of the district court for New Mexico. Skeen was the holder of a patent from the United States on a section of land north of Lea Pool in which all the coal and other minerals was reserved to the Government. Beulah V. Lynch subsequently was granted a prospecting permit covering the Skeen land and the Texas Production Co. in 1929 drilled a producing well in the NW SE, Section 34-20-34. The district court held that the subsurface minerals, including oil and gas, were reserved by the Government when the patent to the surface rights was issued and further that the plaintiff under the circumstances had no preference right to an oil and gas permit on his patented land.

Eunice Area—Lea County

The California Co.'s No. 1 Meredith, SE cor. NE, Section 19-21-36, in the Eunice Pool, half a mile south of the Getty Oil Co.'s No. 1 State, made 225 bbls. of oil and 667,000 feet of gas the first 24 hours. It was completed at a total depth of 3,950 feet. The oil was found at 3,880-3,950 feet. The top of the brown lime was at 2,980 feet and the surface elevation is 3,639 feet. It had a flow of 15,000,000 feet of gas per day in an upper horizon that was shut off. This operation apparently closes the drilling campaign in that pool for the present.

Caprock Area—Lea County

The Western Drilling Co.'s No. 1 Bridges, SE cor. NW, Section 17-17-34, in the Caprock area, encountered a show of sulphur water at 5,040-45 feet and drilling stopped at 5,083 feet. Fluid stood about 3,400 feet in the hole, of which 800 feet was water and the remainder was oil. It was swabbed for 12 hours and made 85 bbls. of oil and 65 bbls. of water in that period, about 1,500 feet of water remaining in the hole. It will be plugged back to the pay at 4,700 feet and shot in an effort to make a commercial well out of it. Culbertson & Conrad's No. 1 State, C NE, Section 22-18-34, spudded with a machine on April 2 and is digging slush pit and moving in rotary.

Hobbs Pool—Lea County

The Midwest Refining Co.'s No. 26 Capps, C SE SW, Section 3-19-38, the only active drilling operation in the Hobbs Pool, is drilling at 1,195 feet in red rock.

Jal Area—Lea County

Leonard & Lever's No. 1 Justis, C SE NE, Section 19-25-37, is drilling at 605 feet in the red beds. It had a show of water at 310-15 feet. The 12½-inch was cemented at 418 feet.

Eddy County

The Flynn-Welch & Yates Oil Co.'s No. 2 State, CNL, Section 28-18-28, which was drilled to repressure the wells in the South Artesia Pool with residue gas from the Phillips Petroleum Co.'s gasoline plant, is bottomed at 2,100 feet in lime. The Artesia pay was cut at 2,075-85 feet and the well is estimated good for 3 bbls. per day. The 5⅜-inch was cemented at 2,071 feet. The Oil Well Drilling Co.'s No. 1 Baker, SE NE NE, Section 21-21-26, Carlsbad district, is drilling at 700 feet in lime. It had a show of sulphur water at 690-700 feet.

Chaves County

R. T. Neal and others' No. 1 Russell, SW NW NW, Section 21-14-25, Hagerman district, is drilling at 2,060 feet in lime and shale, and the Warman Oil Trust's No. 1 Seibert, NE, Section 27-13-24, is drilling at 2,580 feet in lime.

Santa Fe County

Location has been made near Stanley, south of Santa Fe, in the county of that name for a test to a minimum depth of 2,500 feet in the Meyers-Owsley Drilling Co.'s No. 1 Cantwell, NW cor., Section 5-10n-9e. It will be drilled with cable tools.

San Juan County

The Continental Oil Co.'s No. 24, SW NW, Section 1-29-19, Rattlesnake Dome, is resuming at a total depth of 4,730 feet after cementing the whipstock at 3,350 feet to sidetrack drill pipe. This well offsets the discovery well which found oil in the Pennsylvanian formation at 6,667 feet, the only well on the dome drilled to that horizon. The Murchison Oil Co.'s No. 6 Garland, SE NW SE, Section 34-29-11, Kutz Canon district, which had a show for 600,000 feet of gas a day at 1,730 feet when operations were suspended last January for the winter, is resuming and will go about 150 feet deeper. A corrected location for H. L. Williams' No. 1 Staplin, in the Rio Chaco district, is NW SW, Section 17-25n-15w.

Torrance County

J. B. Witt Oil & Gas Co.'s No. 1 Kutchin, NE SE SW, Section 12-7n-7e, McIntosh district, is drilling at 1,440 feet in gray sand. It had a show of noninflammable gas and water at 1,375 feet which was shut off with the 5⅜-inch.

Valencia County

The Acme Development Co.'s No. 1 Santa Fe, SW NW, Section 27-7n-4w, is drilling at 4,970 feet and carrying the 5⅜-inch at 4,915 feet.

COLORADO

Moffat County

A new gas field in Colorado was opened up the past week in Moffat County, in the northwestern part of the State, in the Mountain Fuel Supply Co.'s No. 1 Burton Musser, C NE, Section 5-11n-97, on the Powder Wash anticline. The well came in at 2,152 feet and gauged 34,188,000 feet in 24 hours with a rock pressure of 630 pounds. The structure is approximately 20 miles east and a little south of the Hiawatha gas field and 20 miles south of the Wyoming boundary. To the northeast, on the Wyoming side, is the Baggs structure in southern Carbon County in which the Red Feather

(Continued on Page 89)

DELIVERIES FROM TURNER VALLEY AVERAGED 4,160 BARRELS A DAY

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 18.—Deliveries from the Turner Valley Field in March aggregated 128,975 bbls., approximately 4,160 bbls. a day. This compared with 132,267 bbls. in February and 56,801 bbls. in March, 1930. The March, 1931, deliveries showed an aggregate of 116,150 bbls. to Imperial Oil, Ltd., of which 39,785 bbls. were crude naphtha, 19,714 bbls. discolored naphtha and 6,651 bbls. light crude. Deliveries to Regal Oil & Refining Co. aggregated 12,825 bbls. Royalite Oil Co. with 17 producers delivered 20,136 bbls. of crude naphtha, 3,837 bbls. of discolored naphtha and 189 bbls. of light crude; and Home Oil Co. delivered 6,591 bbls. of crude naphtha and 303 bbls. of light crude. The largest individual producer was Mercury Oils' No. 1 with 15,994 bbls., East Crest Oil Co.'s No. 2-A running second with 8,642 bbls. The field shows a total of approximately 66 producing wells, some decidedly small. No large new producers were added. Among the newer wells, Commonwealth Petroleums' No. 1 averaged 90 bbls. a day and Structure Oil & Gas' No. 1 averaged 70 bbls. Southern Lowery's No. 1 delivered only 239 bbls. for the month.

Lowery Petroleums' No. 2, NW, Section 17-19-2w5, the deepest active test on the Imperial list, is drilling 1,050 feet in the lime at 6,197 feet depth, after cementing at 6,083 feet.

South Turner Valley

In the South Turner Valley, East Crest Oil Co.'s No. 3, LSD 4, Section 16-19-2w5, got the Madison lime at 4,447 feet and is cementing in that formation below 4,483 feet. East Crest's No. 2-A, same LSD, got the lime at 4,241 feet and encountered its big production 419 feet in the lime. No. 3 took slightly over four months to reach the lime, with one month lost owing to fire and cementing, making exceptionally good time. Boller, Sherman & Boller of Tulsa handled the contract.

Commonwealth Petroleums' No. 1, LSD 7, Section 9-19-2w5, has been cleaned out, increasing the production from a March average of 90 bbls. to around 175 bbls.

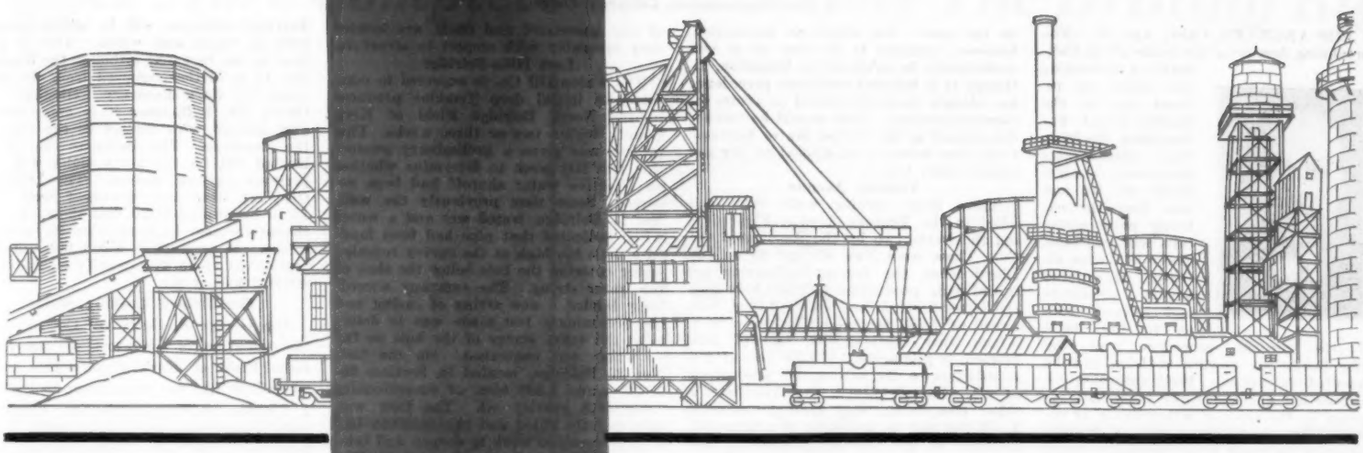
Central Turner Valley

In the Central Turner Valley, Dome Oils' No. 2, LSD 16, Section 36-19-3w5, has got a strong show of light crude in the Dalhousie sand at 5,120-50 feet. Swabbing tests indicate a production of 75 bbls., and production will likely be taken from this horizon as long as it holds up satisfactorily. Later, the test will be deepened to the lime.

In Section 12-20-3w5, Illinois-Alberta Oils' No. 1, LSD 14, has finished reaming to bottom and is now making 3⅞-inch hole at 3,872 feet. The test is deepening in the lime and if larger production is not encountered will be given a shot. It was first brought into production about 1926 and for some years had a production around 100 bbls. a day from the upper lime. British Dominion Oil

(Continued on Page 102)

WHERE RED SIGNALS SAFETY. . .



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DUTCH BOY RED-LEAD

Fear Another Reduction in California

But Hope Expressed the Present Period of Abnormally Low Prices Will Be Relatively Short Lived. Legislation May Be Factor

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 20.—The prevailing low price for crude oil in California and existing low prices for refined oils on the Pacific Coast has furnished the basis for considerable discussion, especially as to just how long the existing price structure will continue. There is a wide diversity of opinion among producers and refiners both as to the merit of the present procedure and the time before an upward revision can be expected in prices. Well informed oil men do not anticipate any immediate recovery in the price of either crude or refined oils. Some admit that a further reduction in crude price schedules would not be surprising. This is particularly interesting in view of recent announcements by the Standard and Shell that they will unequivocally meet any and all competition as long as re-sellers continue to distribute cut-rate gasoline. A number of Standard and Shell stations in the San Francisco Bay region removed the usual price tags this week and have replaced them with "competitive price" signs. This policy has not yet been extended to include Southern California but if this is done it would not be surprising if crude oil prices take another toboggan.

Gasoline Cuts

The drastic price reductions, which started with a 2-cent cut in gasoline on February 28 and reached a climax on March 30 when the last severe slash was made in crude oil prices, is being severely felt by both producers and refiners. Major refiners have all suffered substantial losses and several independent refiners have been obliged to suspend operations until conditions improve. Others, unable to pay producers for crude oil delivered, and delinquent in tax payments, are in temporary receivership. Producers of crude oil are feeling the pinch resulting from low prices and a number may suspend activities within 30 days. There is a feeling among many producers and independent refiners that the present period of abnormally low prices will be relatively short lived and consequently they are making a determined effort to minimize expenses and liquidate assets to tide them over the present crisis. Other producers, less fortunate so far as financial resources are concerned, may be obliged to suspend production or continue to operate at a loss, as existing crude price schedules are below actual lifting costs in many cases.

Present unsettled conditions on the Pacific Coast are particularly interesting in view of legislation pending at the state capital, as some are of the opinion that compulsory regulation is the basic foundation of permanent stability. The recently enacted measure, which provides for more stringent supervision of gasoline sales and renders the evasion of gasoline tax payments more difficult, is expected to be an important factor in the attempt to stabilize marketing conditions as this puts all refiners and jobbers on a comparable basis. The measure to regulate crude oil production, Sharkey's Senate Bill No. 362, has not yet been acted upon by the legislature although the oil industry's committee of the Assembly and Senate has recommended its passage. It is believed this bill will come up for early consideration and may possibly carry an emergency clause to make it enforceable earlier than would ordinarily be the case. Its effect on production, however, remains to be seen as it will undoubtedly be subjected to litigation, although it is believed sufficient precedence has already been established to assure its constitutionality. This should be further determined as the United States Supreme Court has before it an appeal on the gas conservation law.

Ventura Avenue

Three large flowing wells were finished in the Ventura Avenue Field during the week, two by the Associated Oil Co. These were Nos. 40 and 85 on the Lloyd lease, the former registering an initial daily production of 2,952 bbls. and the latter 2,010 bbls. No. 40 Lloyd, bottomed at 7,486 feet and finished with a 5-inch liner carrying 500 feet of perforated, is producing 2,016,000 feet of gas in addition to the substantial production of oil. No. 85 Lloyd, the Associated's other completion, was carried down to 7,375 feet and is producing a substantial quantity of gas, current production approximating 8,425,000 feet. The third well finished in the Ventura Avenue Field this week was the Shell Oil Co.'s No. 67 Taylor. This well, finished in the shallow zone at 4,501 feet, tanked 915 bbls. of clean 32.6 gravity oil during the initial 24 hours. It is flowing through a one-half inch bean and shows a pressure on the tubing of 300 pounds and a casing pressure of 1,000 pounds.

The Associated Oil Co.'s No. 57 Lloyd, a deep test in the Ventura Avenue Field, is believed to have definitely proved the existence of a fourth productive horizon and the production test to be made will be watched with interest. This well was still coring oil sand a few days ago at 8,735 feet. Considerable difficulty is being experienced in making footage due to the extremely high gas pressure. The well has threatened to get beyond control on several occasions and this has been averted only by extremely careful drilling. The significance which attaches to this well lies in the fact that it substantially increases the possible ultimate recovery of the Associated and Shell and will probably lead to the drilling of one or more deep tests around the edge of the structure on property held by the Petroleum Securities, Pacific Western, Bolsa Chica and M. K. T. Oil Co. The General Petroleum will also benefit by any discovery made by the Associated in No. 57 Lloyd as its Barnard and Notten leases, while not as extensive as holdings of the Associated and Shell, are located very favorably with respect to structure.

Lost Hills-Belridge

The Union Oil Co. is expected to complete its initial deep Temblor producer in the North Belridge Field of Kern County within two or three weeks. This project was given a preliminary production test last week to determine whether an effective water shutoff had been secured. Some time previously the well, No. 17 Belridge, tested wet and a water witch indicated that pipe had been landed a little too high as the survey revealed water entering the hole below the shoe of the water string. The company accordingly landed a new string of casing and the preliminary test made was to determine the exact status of the hole so far as water was concerned. On the test, No. 17 Belridge, located in Section 36-27-20, made 1,500 bbls. of exceptionally clean 39.8 gravity oil. The flow was subsequently killed and the company has already resumed work to deepen and take in some more productive formation. The bit was rotated this morning at 5,600 feet and field reports indicate a substantial increase in gas pressure.

The showing of the Union's No. 17 Belridge has revived interest in the possibilities of deep drilling not only in the North Belridge Field but in South Belridge and Lost Hills as well. Previous to the test conducted by the Union, the unsuccessful work of other operators had dampened the ardor of some with respect to North Belridge. The Richfield Oil Co. drilled a deep dry hole off the structure northwest of the Belridge Oil Co.'s deep zone discovery in Section 35-27-20 and subsequent unfavorable developments were conspicuous especially because of the interest with which operators were watching developments. Following abandonment of the Richfield Oil Co.'s duster, The Texas Company indefinitely suspended work on No. 1 Martin, an offset in Section 22-27-20, at 5,048 feet. The Ohio Oil Co.'s unsuccessful attempt to develop deep Temblor production in No. 1 Bloemer in Section 36-27-20 caused the Belridge Oil Co. to suspend drilling activities in four drilling projects simultaneously with a suspension of work in No. 1 McPhail by the Standard. The Ohio's well is not yet out of the running although the outlook at 5,986 feet is not particularly encouraging. The outcome of work by the Belridge, Ohio and Union indicates the probability that the North Belridge structure will be rather limited both in length and width. This is evident by the fact that although the Union's No. 17 is further removed from the Belridge Oil Co.'s discovery well than the Ohio's No. 1 Bloemer it is more favorably located with respect to the axis of the structure. This indicates that wells located out on the north flank will experience varying results. The Belridge Oil Co.'s deep zone discovery well, No. 15 in Section 35-27-20, has shown a consistent increase in production for several weeks. It is flowing 4,760 bbls. of exceptionally clean 41.4 gravity oil and 19,400,000 feet of gas.

Cored Good Looking Sand

The George F. Getty Oil Co. focussed the attention of operators on the Lost Hills Field of Kern County this week when it drilled out the cement in its No. 1 Lincoln, drilling in Section 12-26-20. This well cored an exceptionally good looking oil sand from 3,830 feet to 3,940 feet and the showings encountered made it advisable to land a string of 9-inch, subsequently set at 3,768 feet. The company is making preparations to conduct a production test and if a water shutoff has been effected this well may be on production within a few days. The Universal Consolidated Oil Co., a subsidiary of the Richfield Oil Co., was unable to recover the fish lost in its No. 49 in Section 32-26-21 at Lost Hills and was forced to cement the fish in place and sidetrack it. This well, expected to be a factor of considerable importance in adjusting the affairs of the Richfield Oil Co., is down 5,334 feet with the top of the fish at 5,186 feet. It is the consensus that the difficulties of the Richfield Oil Co. will be greatly minimized if the Universal Consolidated successfully develops deep Temblor production in the Lost Hills Field. It is easy to appreciate the significance and importance of this well when one considers that the Universal Consolidated is by far the largest holder of acreage in the Lost Hills Field, a single structure approximately 6 miles long.

Kettleman Hills

Judging by the progress made in the North Dome of Kettleman Hills during the past 60 days, this field will become an important factor in production early this summer. It already occupies a relatively important position in state production but it is by no means the dominating factor it is destined to become before the year ends. There are 10 wells rotating in the Elliott oil sand and, while this zone will be cased off and production developed in the Ochsner zone, these wells should begin coming into production perhaps within the next 60 days. The Standard is temporarily held up with a fishing job in No. 65-29-J at 7,735 feet and, while this will delay completion, the company is making good footage in No. 21-7-Q. The Kettleman North Dome Association should also have one or more wells on production in the near future. The Union has just passed the 7,000-foot level in No. 1 Amerada King and, with the top of the Bentonite definitely encountered at 6,952 feet, preparations are being made to set a string of casing. No. 2 Huffman of the Superior, an offset, is rotating at 7,580 feet with a possible completion depth somewhere around the 8,300-foot level.

The Kettleman North Dome Association, upon taking over possession of the various wells under its control, renumbered each individual project. Heretofore, wells have been carried under the name of individual operators developing government acreage. To clarify conditions, the Kettleman North Dome Association has adopted a uniform system of

TANKER SHIPMENTS FOM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last week
Crude oil	.....	.....	.....	.....	.....	77,405
Fuel oil	.....	.....	.....	.....	.....	71,950
Diesel and gas oil	119,705	17,101	.....	.....	798,729	1,233,182
Gasoline	273,425	39,061	411,646	58,807	4,321,322	4,773,563
Kerosene	.....	.....	41,512	5,930	41,512	.....
Coastwise—						
Crude oil	532,319	74,617	242,076	34,582	5,758,933	4,338,121
Fuel oil	126,900	18,129	226,091	32,299	4,146,090	5,213,257
Diesel and gas oil	60,349	8,621	38,055	5,436	498,996	580,330
Gasoline	336,771	48,110	173,210	24,744	3,253,130	3,260,702
Kerosene	12,661	1,809	.....	.....	119,132	32,733
Naphtha distillate	.....	.....	.....	.....	4,952	.....
Exports—						
Crude oil	86,131	12,304	10,115	1,445	1,937,284	1,947,973
Fuel oil	291,257	41,608	443,392	63,342	4,431,321	5,028,648
Diesel and gas oil	33,269	4,751	8,628	1,233	1,003,621	1,524,730
Gasoline	301,119	43,017	176,722	25,532	2,807,549	4,652,341
Kerosene	71,520	10,217	123,304	17,615	500,638	1,051,268
Lubricants	12,050	1,721	.....	.....	18,978	5,057

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Diesel and gas oil	.....	.....	.....	.....	.....	88,280
Gasoline	.....	.....	51,114	7,302	115,089	440,188
Lubricants	.....	.....	.....	.....	11,000	2,946
Coastwise—						
Fuel oil	33,000	4,714	64,310	9,187	1,132,770	1,102,739
Diesel and gas oil	.....	.....	.....	.....	88,756	99,873
Gasoline	92,757	13,251	37,878	5,411	833,479	1,201,889
Kerosene	6,116	874	20,114	2,873	56,236	102,597
Exports—						
Crude oil	.....	.....	.....	.....	6,010	3,075
Fuel oil	72,402	11,057	.....	.....	276,278	347,444
Diesel and gas oil	.....	.....	65,931	9,419	193,548	124,540
Gasoline	21,864	3,123	88,223	12,603	907,911	1,095,246
Kerosene	.....	.....	.....	.....	196,412	162,499

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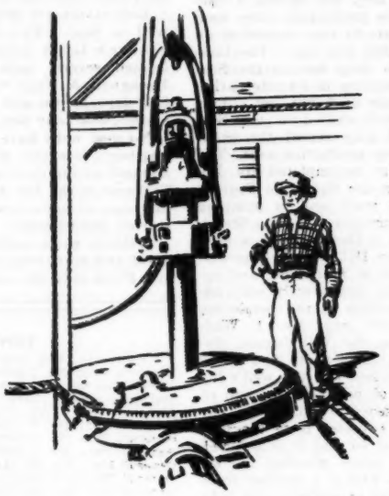

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numbering and lettering. Under the association's new system, which was used years ago by the Pacific Oil Co., Standard Oil Co. and others, the township and range will be designated by a letter. The letter J, for instance, indicates that a well is in Township 21s, Range 17e. Township 22s, Range 17e will be designated by the letter P and Township 22s, Range 18e will be indicated by the letter Q. As an illustration, we may take the Kettleman North Dome Association's well No. 27-34-J. The number 2 in No. 27 indicates that the well is in the second row from the left side of the section and the number 7 in No. 27 signifies that the well is in the seventh row from the top of the section. The number 34 indicates the particular section involved, while the J indicates the section, township and range. Under the old arrangement, this well would be definitely located as No. 27 in Section 34, Township 21s, Range 17e. The Standard has adopted a similar system, the lettering being the same as that used by the Kettleman North Dome Association in the North Dome and it has designated Towuship 23s, Range 19e in the Middle Dome as location V.

Over in the Jacalitos district west of Kettleman Hills, the Associated drilled entirely through the Temblor but encountered only meager showings. This well encountered the top of the Kreyenhagen shale at approximately 4,400 feet and field reports indicate the company will plug back and test out upper showings. In the Semitropic district the Shell is still patiently working on No. 1 Williams, a deep test drilled in Section 17-27-23 to a depth of 9,700 feet. The results of work on this well have not been particularly impressive during the past several weeks as the conducting of a production test on a well this deep must be undertaken with care. It will probably be several weeks before the final status is determined. In the Weed Patch district of Kern County there were no indications of immediate production. This area is definitely proved as productive but is being developed slowly. Six wells are being drilled in the Weed Patch, or Mountain View Field; one, No. 1 Porter Day, the discovery well, has been carried down to 8,250 feet as a deep test.

Huntington Beach

Successful in sidetracking a lost core barrel in No. 17 Transport, a deep test in the town lot section of the Huntington Beach Field, W. E. McCaslin is proceeding to make a production test which has become a cynosure of all eyes because of its unquestioned importance from a production standpoint. The production test will be made immediately and, with tubing being run in the hole, the importance of this well from a production standpoint should be determined shortly. If McCaslin develops substantial production, it will lead to the immediate drilling of a number of deep wells and precipitate another town lot drilling campaign. The area is split up into numerous 50-foot lots and, while many wells producing from the present zone will be deepened, we may also anticipate the starting of a fairly large number of comparatively new holes.

The Standard Oil Co.'s No. 105 Murphy Coyote, a recent completion in the West Coyote Field, doing 290 bbls. per day from 5,787 feet, has shown a consistent increase in production since completion and appears to have settled to an average of 395 bbls. per day. The Continental Oil Co.'s deep test in the Seal Beach Field is rotating in an alternating oil sand and shale at 9,060 feet. This is the deepest well drilled in the Seal Beach Field and may reveal the existence of a new deep productive zone. The General Petroleum recompleted its No. 79-B Santa Fe in the Santa Fe Springs Field during the week and is pumping 199 bbls. of 25.1 gravity oil. The Standard Oil Co.'s No. 1 Bastanchury, a deep test in the Coyote Hills district, proved to be a water well at 8,144 feet, and operations have been temporarily suspended. York & Smullin were completing preparation to test out No. 1 Watson, a wildcat in the Wilmington district. This well, in Section 29-4-13, is bottomed at 3,698 feet and the well's log indicates 50 feet of oil sand, the top of which was encountered at 3,620 feet. The production test is expected to be concluded within a day or so and it is believed the outcome will prove whether the oil sand found in this well is a stringer from Torrance or whether an entirely new field has been discovered.

Playa Del Rey

There was only one completion in the Playa Del Rey Field during the week. This was the Santa Catalina Oil Co.'s No. 1 Venice, returned to production doing 120 bbls. per day after being cleaned out to bottom. Drilling operations have been reduced to a minimum in this field due to the inability of operators to dispose of production and the prevailing low price offered for Playa Del Rey crude. The Union will probably have No. 9 Townsite on production within a few days as drilling operations have just been concluded at 6,060 feet. No. 1 Vidor, the company's outpost a little less than 1 mile east of production, is rotating in a hard sandy shale at 5,600 feet. Drilling operations in the Long Beach Field were devoid of any important developments. Several additional wells have been shut in during the past few days.

WILDCATTERS SHOW ACTIVITY IN NORTHERN MICHIGAN COUNTIES

By Paul A. Elliott

MUSKEGON, Mich., Apr. 20.—Buchanan & Frye's No. 1 Fruitvale, located in Section 6, Blue Lake Township, Muskegon Field, was shot in the upper Traverse formation at about 1,900 feet after having been reopened by C. J. Sipple. It showed considerable gas after the shot but must be cleaned out before possible oil production can be ascertained.

Indications are that it will be a small well at best. Two tanks of oil at the Fruitvale Lot & Landowners' No. 1 well, located several miles northeast of the Buchanan & Frye well, were burned a few days before and the boiler exploded at the well near the inn.

No new wells have been started in the territory, however, although it was announced at the time oil was struck in the Traverse in the Lot & Land Owners well that one or more new projects would be started immediately.

Wildcat wells north of the Muskegon Field and northwest of the Mount Pleasant Field held the interest of operators in the Wolverine state last week where the only completion was a dry hole in the Dundee formation.

Henry Carpenter, Muskegon contractor, completed the White River Oil Corp.'s No. 5 William Lipka well, N half NE SE, Section 19-12n-17w, Montague Township, Muskegon County, as a "duster" in the Dundee and started to plug it back to the lower Traverse for a test where it had a showing of oil at about 1,880 feet.

H. C. Nelson's No. 1 Arvid Nelson well, SE NW, Section 24-12n-18w, White River Township, was reported to have struck water in the upper Traverse formation, although no figures on the exact depth are available.

The third Muskegon County wildcat located within 15 miles northwest of the proved Muskegon Field is H. and W. Feicke's No. 1 Feicke, SE SW, Section 1-11n-17w, Fruitland Township, near the Lakewood Road on United States Highway 31. Water struck in the Marshall

(Continued on Page 103)

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S-T-R	Depth	Status
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	6,191	sd. sh. drilling
Fields Gas Co., No. 1 Santa Maria, Santa Barbara Co.	8- 9-33	5,570	suspended
Barnsdall, No. 1 Gato Ridge, Santa Barbara Co.	9- 8-32	6,170	cleaning out
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-33	1,800	cleaning out
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas—shut in
General Pet., No. 2 Goleta, Santa Barbara Co.	21- 4-28	4,350	gas—shut in
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	4,950	Sespe forma.
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	1,485	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
General Pet., No. 138 Goleta, Santa Barbara Co.	21- 4-28	4,931	suspended
General Pet., No. 139 Goleta, Santa Barbara Co.	21- 4-28	2,051	suspended
General Pet., No. 143 Goleta, Santa Barbara Co.	21- 4-28	1,040	suspended
Boles Oil Co., No. 140 Goleta, Santa Barbara Co.	22- 4-28	1,040	suspended
U. S. Pet., No. 141 Goleta, Santa Barbara Co.	20- 4-28	1,035	suspended
U. S. Pet., No. 142 Goleta, Santa Barbara Co.	20- 4-28	1,032	suspended
U. S. Pet., No. 143 Goleta, Santa Barbara Co.	20- 4-28	1,019	suspended
El Camino, No. 149 Goleta Tideland, Santa Barbara Co.	22- 4-28	1,035	suspended
South. Cal. Drlg. Co., No. 1 Goleta, Santa Barbara Co.	12- 4-29	912	sd. sh. drilling
Bolsa Chica, No. 191 Goleta, Santa Barbara Co.	24- 4-29	4,191	cleaning out
Caldwell, Brown, No. 159 Goleta, Santa Barbara Co.	24- 4-29	1,100	redrilling
Johnson, George, No. 1-A Goleta, Santa Barbara Co.	19- 4-27	1,903	redrilling
Cuyama Oil Corp., No. 1 Cuyama, Santa Barbara Co.	12-10-27	rig	suspended
Hart Pet. Co., No. 1 Cuyama, Santa Barbara Co.	27-10-26	rig	suspended
Sovereign Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	5,500	cleaning out
Pacific Western, No. 1 Gilbraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
C. C. M. O. Co., No. 2-A Rincon, Ventura Co.	23- 3-24	9,180	br. sh. drilling
Continental, No. 1 Rincon, Ventura Co.	23- 3-24	2,194	hd. sd. drilling
Pure Oil Co., No. 1 S. P. Canyon, Ventura Co.	15- 4-21	2,591	suspended
Superior Oil Co., No. 1 Sespe, Ventura County	14- 4-21	6,314	sd. sh. drilling
Lockwood Valley Oil Co., Well No. 1, Ventura Co.	32- 8-21	1,015	suspended
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-21	2,660	hd. sd. drilling
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,005	recemented
Kent & McDonald, No. 1 Tembler Hills, Kern Co.	3-32-22	1,672	suspended
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,367	testing
General Pet., No. 1 Beiridge, Kern Co.	30-28-21	4,121	br. sh. drilling
The Texas Company, No. 1 Beiridge, Kern Co.	22-27-20	5,045	suspended
Standard, No. 2 Beiridge, Kern Co.	31-27-20	5,304	cleaning out
Ohio Oil Co., No. 1 Beiridge, Kern Co.	36-27-20	5,980	testing
Reward Oil Co., No. 1 Beiridge, Kern Co.	34-27-20	4,640	sd. sh. drilling
Union, No. 17 Beiridge, Kern Co.	36-27-20	5,541	1,500 bbls.
Continental, No. 1 Beiridge, Kern Co.	36-27-20	3,860	sd. sh. drilling
Casa Mira Oil Co., No. 1 Beiridge, Kern Co.	29-28-20	rig	suspended
Tom Cannon, No. 1 Beiridge, Kern Co.	18-28-22	rig	suspended
Wallace, K. C., No. 1 Beiridge, Kern Co.	32-29-21	4,222	cleaning out
Rio Cal. Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	cleaning out
Wicker, Sy, No. 1 Arvin, Kern Co.	12-30-28	1,250	suspended
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	8,250	reaming
Shell, No. 2 Weed Patch, Kern Co.	29-30-29	6,371	sd. sh. drilling
Shell, No. 3 Weed Patch, Kern Co.	32-30-29	6,050	sd. sh. drilling
Osborn-Colter, No. 1 Weed Patch, Kern Co.	15-30-29	1,311	sd. sh. drilling
Mohawk Oil Co., No. 1 Weed Patch, Kern Co.	32-30-29	6,150	reaming
Mohawk Oil Co., No. 2 Weed Patch, Kern Co.	4-31-29	rig	suspended
Alpine Oil Co., No. 1 Weed Patch, Kern Co.	13-31-29	3,712	sd. sh. drilling
Standard, No. 1 Devils Den, Kern Co.	14-25-18	2,890	br. sh. drilling
Hannon, Tom, No. 1 Devils Den, Kern Co.	25-25-18	2,925	cemented
Cumberland Oil Co., No. 1 Devils Den, Kern Co.	21-26-18	1,590	cleaning out
Langstroth, F. B., No. 1 Blackwell Corner, Kern Co.	14-26-19	rig	suspended
E. J. Miley, No. 1 Blackwell Corner, Kern Co.	17-26-19	rig	suspended
Shell, No. 1 Semitropic, Kern Co.	17-27-23	9,700	testing
Moran & DeCamp, No. 1 Mojave, Kern Co.	26-10-14	750	suspended
Meridan Oil Co., No. 1 Antelope, Kern Co.	11- 9-15	3,804	suspended
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	5,530	suspended
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	4,503	br. sh. drilling
Carruthers Oil Co., No. 1 Fresno, Fresno Co.	4-17-20	rig	suspended
Miracle Oil Co., No. 1 Cuyama, San Luis Obispo Co.	17-10-25	314	suspended
Panorama Oil Co., Well No. 1, San Luis Obispo Co.	7-31-21	4,019	redrilling
Tray El Oil Co., No. 1 Carizzo, San Luis Obispo Co.	7-32-22	1,311	hd. sd. drilling
Cities Service, No. 1 Creston, San Luis Obispo Co.	20-28-15	....	grading
Latin Amer. Pet., No. 1 Shandon, San Luis Obispo Co.	21-27-15	4,535	suspended
Continental, No. 1 San Miguel, San Luis Obispo Co.	26-25-11	5,150	hd. sd. drilling
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	24-28-12	916	suspended
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,010	suspended
Schockley, C., No. 1 Pismo, San Luis Obispo Co.	13-32-13	2,706	hd. sd. drilling
Pacific Inland, Well No. 1, Monterey Co.	19-23-15	1,144	hd. sd. drilling
Brown, F. A., No. 1 Parkfield, Monterey Co.	15-23-14	316	suspended
Irma Investment Co., No. 1 Dudley Ridge, Kings Co.	7-23-20	691	sd. sh. drilling
O'Donnell, J. E., No. 1 Dudley Ridge, Kings Co.	7-23-20	1,635	gas well—idle
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	20-23-20	3,750	recemented
Kettleman Lakeview, No. 1 Tulare Lake, Kings Co.	11-23-19	1,304	suspended
Purman, T. H., No. 1 Reef Ridge, Kings Co.	36-23-17	2,940	br. sh. drilling
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	suspended
Utah Dev. Co., No. 1 Pyramid Hills, Kings Co.	13-24-18	....	grading
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	6,590	sd. sh. drilling
Orinda Pet., Well No. 1, Contra Costa Co.	32- 1- 3	1,975	hd. sd. drilling
Pettingall, C. E., No. 1 Porterville, Tulare Co.	15-22-27	791	hd. sd. drilling
Knapp, George, No. 1 Porterville, Tulare Co.	20-22-27	590	sd. sh. drilling
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Colusa Oil Co., No. 1 Bush, Colusa Co.	32-15- 4	870	hd. sd. drilling
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,117	hd. sd. drilling
Orland Oil Synd., No. 1 Orland, Tehema Co.	21-23- 3	2,520	sd. sh. drilling
Sargent Oil Co., No. 1 Sargent, Santa Clara Co.	1-12- 3	mtl.	building rig

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Olympic Realty Corp., No. 1 Barnes, Los Angeles Co.	14-	2-15	5,059	redrilling
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9-	2-15	4,910	sidetracking
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12-	2-15	6,238	suspended
Mesmer City Corp., No. 1 Mesmer, Los Angeles Co.	24-	2-16	4,403	sd. sh. drilling
Dwyer & Becker, No. 1 Compton, Los Angeles Co.	17-	3-13	4,520	suspended
Allison Synd., No. 1 Baldwin, Los Angeles Co.	8-	2-14	5,110	suspended
Cal. Ventura Oil Co., No. 1 Manhattan, Los Angeles Co.	30-	3-14	6,525	suspended
Cal. Ventura Oil Co., No. 1 Hermosa, Los Angeles Co.	31-	3-14	3,396	suspended
Cal. Ventura Oil Co., No. 2 Hermosa, Los Angeles Co.	31-	3-14	3,309	suspended
Cal. Oilfields Corp., No. 1 Hermosa, Los Angeles Co.	31-	3-14	2,560	fishing
Carniel Oil Corp., No. 1 Hermosa, Los Angeles Co.	31-	3-14	3,214	cemented
Hermosa Expl. Co., No. 1 Hermosa, Los Angeles Co.	31-	3-14	2,746	sd. sh. drilling
Westwood Pet., No. 1 Hermosa, Los Angeles Co.	6-	4-14	2,733	cemented
Tulsa Oil Co., No. 1 Hermosa, Los Angeles Co.	6-	4-14	2,328	sd. sh. drilling
Thorpe Pet. Co., No. 1 Hawthorne, Los Angeles Co.	10-	3-14	3,690	suspended
McMahon & McDonald, No. 1 Watts, Los Angeles Co.	12-	3-14	4,665	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24-	3-15	750	suspended
Shelley, C. M., No. 1 Torrance, Los Angeles Co.	12-	4-14	rig	suspended
York & Smullin, No. 1 Watson, Los Angeles Co.	29-	4-13	3,698	abandoned
Mack Oil Co., No. 1 Chatsworth, Los Angeles Co.	6-	2-16	rig	suspended
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11-	2-15	2,700	suspended
San Val Oil Co., No. 1 Van Nuys, Los Angeles Co.	14-	1-16	3,124	to abandon
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27-	2-10	2,131	sd. sh. drilling
Arden Oil Co., No. 1 Puente, Los Angeles Co.	15-	2-10	3,325	suspended
D. & B. Oil Co., No. 1 Puente, Los Angeles Co.	3-	2-10	4,620	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30-	2- 9	1,092	suspended
Marcel Pet. Co., No. 1 Puente, Los Angeles Co.	31-	2- 8	3,100	suspended
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30-	2-12	1,370	cleaning out
The Texas Company, No. 1 Montebello, Los Angeles Co.	4-	2-12	2,941	hd. sd. drilling
Huntington Cent. Oil Co., No. 1 Montebello, Los Angeles Co.	34-	1-11	mtl.	building rig
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co.	28-	1-12	5,278	suspended
Hammer, Fred, No. 1 Alhambra, Los Angeles Co.	24-	1-13	3,412	suspended
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16-	1-11	2,280	suspended
Rancho Oil Co., No. 1 Rosemead, Los Angeles Co.	30-	1-11	5,730	abandoned
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26-	1-17	388	sd. sh. drilling
Nesa Pet., No. 1 Newport, Orange Co.	21-	6-10	4,910	suspended
Hall, H. L., No. 1 Newport, Orange Co.	20-	6-10	790	suspended
Gesell, T. F., No. 1 Newport, Orange Co.	29-	6-10	1,470	set pipe
Standard, No. 1 Newport, Orange Co.	26-	6-10	4,270	hd. sd. drilling
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	12-13-	4	2,519	suspended
Borderland Oil Co., No. 1 Point Loma, San Diego Co.	30-16-	2	4,690	cleaning out
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18-	2	....	location
Carr, O. K., No. 1 Capistrano, San Diego Co.	13-	8-	8	5,250	suspended
Grey, H. H., No. 1 Redlands, San Bernardino Co.	35-	1-	2	2,392	suspended
Western Gulf, No. 1 Santa Ana, Orange Co.	12-	3-	8	3,087	hd. sd. drilling
The Texas Company, No. 1 Olive, Orange Co.	7-	4-	9	4,312	sd. sh. drilling
Gieck Oil Co., No. 1 Sunset Beach, Orange Co.	20-	5-11		114	sd. drilling

Rock Pressure in Lathrop Pool Falls

Wells May Have to Be Put on Pump in Couple of Months If Air or Gas Lift Not Used. Three Fields Now Practically Joined

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 20.—Last week two wells, Magnolia Petroleum Co.'s No. 1 Florey and Burton Drilling Co.'s No. 1 Florey, both in the Peter Holmes Survey on the western edge of the Kilgore Pool, northern Rusk County, were making high percentages of water and basic sediment creating more excitement in the industry than any of the 2 or 3-mile extension wells have created during the last two months, for it was felt that other wells on the western side would also show up salt water in a hurry, condemning thousands of acres, and no doubt encroaching into the pools themselves.

So far no other wells have shown any salt water although the Selby Oil & Gas Co.'s No. 1 Snavely in the western part of Gregg County was believed near the salt water level, and consequently would experience salt water intrusion in a short time. However, on a proration test this week it flowed 1,000 bbls. in one hour, with no salt water. Datum of this well is minus 3,310 feet while the datum on the Magnolia well is minus 3,311 feet.

Guy E. Lewis' No. 1 Cooke, western extension of the Joiner Pool, was also expected to make water in a short time, but this well has been shut in for pipe line connection, consequently nothing can be told about its proximity to the water.

Proration Tests in Lathrop

The Lathrop area, north of the Sabine River in Gregg County, has been given proration tests, all of the wells except one being tested. This one will be tested immediately. Total daily potential of the 28 wells tested through eleven-sixteenths-inch choke is 62,012 bbls., four of the wells not having any pipe line connections, and being shut in. The gauges were made through the choke on tubing with casing closed, and do not give a true potential of the area, but do give a fair potential which is sufficient for prorating purposes.

Rock pressure in the Lathrop Pool showed a decline on the proration tests, and temperatures of some of the wells were as high as 143°, which leads many to feel sure that salt water is near and will soon show up in the pool, although the temperature of the discovery well has run extremely high since put on production, and it has not yet showed any water, to the chagrin of many who were ready to advertise that it would soon go to water.

Rock pressure in the Lathrop Pool has fallen to 300 and 250 pounds, or about half of the pressure which the wells had when they were completed, and as the pressure is apparently declining gradually it would lead one to feel that many, if not the majority of the wells, would have to be put on the pump within a couple of months if air or gas lift is not used. Gas lift is now being used on two leases in the Joiner Pool, showing a decided effect on the wells used in the experiment, the production being more than doubled in one case.

Eight Pipe Lines

Eight pipe lines are now serving the Lathrop area, Gregg County, only one being a major outlet, that line belonging to the Magnolia Pipe Line Co. which has a pumping station in the Groce Survey, southwest of Longview, as the western terminus of a 10-inch line which connects with a trunk line at Center, Tex., in Shelby County. From the Groce Survey two laterals, 6-inch lines, connect with the Kilgore Pool in northern Rusk County and the Lathrop Pool. The Magnolia Petroleum Co. has producing leases in both pools, and is also purchasing oil from neighboring leases. The Shell Pipe Line Co. has an 8-inch carrier from the Lathrop Pool to a loading rack on the T.&P. Railroad, the East Texas Refining Co. has a 4-inch and 6-inch line running to a loading rack and its refinery at Longview; the Independent Pipe Line Co. has a 4-inch tieing into a loading rack on the T.&P.; the Arkansas Fuel Oil Co. has a short 4-inch line connecting its leases with a loading rack on the T.&P.; Simms Oil Co. has a 4-inch connecting its leases with a loading rack and McMillan Petroleum Corp. also has a 4-inch connecting the pool with a loading rack on the T.&P. Railroad near Willow Springs.

Gauging wells in the Joiner and Kilgore areas has not yet been completed due to many more wells on production than in the Lathrop area, and also due to animosity against proration. It takes three hours to gauge a well, and as there are about 45 wells being completed in the two areas each week the umpires have a tremendous task ahead of them.

Conference on Allowable

A meeting was held in Austin today by chairmen of the three advisory committees of the three East Texas Pools, Dan Moody, attorney for the East Texas Lease, Royalty & Producers Association, Carl Estes, secretary of that association, and other interested parties. It is believed that the allowable will be increased from the previously set amount of 90,000 bbls. daily, and reports came in this afternoon that the allowable would be raised to 130,000 bbls. per day to start the proration period which should have become effective April 10.

Production in the Lathrop Pool ran 60,600 bbls. on April 18 when the Magnolia connected its wells with its new line. Production from the three producing areas in Gregg, Rusk and Smith County averaged 248,400 bbls., the Lathrop area producing 38,180 bbls. from 25 wells, the Kilgore area producing 148,123 bbls. from 69 wells, and the Joiner area producing 62,085 bbls. from 129 wells—a total of 223 wells.

Several sales of crude oil from the three areas have been reported at exceptionally low prices, but none of these can be confirmed, 15 cents being the lowest price that is authentic, and 19 cents being paid in several causes, these prices being prevalent at the wells, and running the cost of the oil up to 21 and 25 cents loaded on tank cars. The East Texas Lease, Royalty & Producers Association has been reported preparing a note to purchasers of crude oil that they will not accept the low prices now being paid for oil; some of the royalty owners contemplating building storage to take care of their oil instead of sacrificing it for the general price now paid for the crude. After proration is put into effect in the new producing areas of East Texas the price of the crude may be stabilized.

More Extension Wells

Another key well was completed this week between the Joiner and Kilgore Pools in Rusk County. This well is Pearl Oil Co.'s No. 1 Eaton, northwest of the town of London in the Francisco Cordova Survey, and extends the Joiner Pool farther northwest in the direction of the Kilgore Pool, helping to certify to the connecting of the two pools. The well flowed 2,200 bbls. in 12 hours through a 1-inch choke on tubing with 280 pounds pressure, showing a large volume of gas. Total depth was 3,705 feet. Top of the sand was logged at 3,681 feet, and 6-inch casing was previously set at 3,675 feet.

Extension wells fail to attract much attention in any of the three areas now, for during the past few weeks all of the pools have witnessed several extensions, most of the extensions covering several miles, and widening the fields from north to south and from east to west, bringing the three pools in closer contact with production, and also proving hundreds of more acres to production.

Heep Oil Co.'s No. 1 Barber, in the William Curry Survey, Rusk County, was another key well completed this week. It extends production of the Kilgore Pool farther to the north in the direction of the Lathrop Pool. It flowed 500 bbls. the first hour through a 1-inch choke through tubing and casing with a pressure of 240 pounds, and making an estimated 3,000,000 to 5,000,000 feet of gas, the oil testing 42.2 at 90 degrees, and having 1½ per cent paraffin content. First sand was topped at 3,525-26 feet, hard shale was encountered from 3,526-36 feet, hard tight oil sand was cored from 3,536-43 feet and shale and sand was cored from 3,543-53 feet. Total depth of the hole is 3,553 feet. Only about 3 miles now separate producing wells in the Lathrop area from those in the Kilgore area, and the consensus is that the three pools are as good as linked into one producing pool which extends approximately 37 miles from north to south, the north end covering around 7 miles from east to west and the south end over 5 miles east to west the width in the Kilgore Pool defined to about 3 miles, making the entire pool assume the shape of an hour glass.

On Western Edge

Devonian Oil Co. and Gulf Production Co.'s No. 1 Motley, approximately 3 miles due south of the Magnolia Petroleum Co.'s No. 1 Florey which is maksalt water, proved a large extension to the Kilgore Pool in the direction of the Joiner area this week when it came in making 300 bbls. the first 30 minutes through a 3-inch line and tubing, then pinched to twenty-seven-sixty-fourths-inch choke and making 50 bbls. the next 20 minutes, having 375 pounds tubing pressure. This well leaves but a short distance to be drilled between it and the Pearl Oil Co.'s No. 1 Eaton to connect the Joiner and Kilgore Pools, and as drilling will no doubt go on undisturbed while production is being curtailed, the intervening acreage will probably be proved to production within a few weeks. The well is considered as setting on the western edge of production, and water is feared to be near the sand, which was cored from 3,663-81 feet, but it failed to show up when completed. However, it

(Continued on Page 122)

EAST CENTRAL TEXAS WILDCATS

Week Ending April 18

CHEROKEE COUNTY

Company, well, farm, name, section and block—	Remarks:
D. H. Byrd et al's No. 1 Dixie, 1,385 ft. from N along E line of G. W. Forman Sur. from NW cor. of W. H. Felder 854-ac. tract and 150 ft. W at right angles to E line	Drlg. 3,690 ft.
Rowan and Nichols' No. 1 Owsley, 530 ft. from N and 1,530 ft. from E line of Lorman Sur.	Set 180 ft. 12½-in. csg.
McDonald Bros.' No. 1 Newton, center of 113-ac. tract, Thomas Quevedo Sur., 3 miles N of Jacksonville	Derrick.
Sinclair Oil & Gas Co.'s No. 1 G. T. Martin, 200 ft. from N and 629 ft. from W line of 62.8-ac. tract, Larkin Baker League Sur.	Rig up and shut down.
Sinclair Oil & Gas Co.'s No. 1 Thomas McRae, 330 ft. from E and 4,989 ft. from S of farm, F. J. Vallanova Sur.	Rig up.
William A. Stone's No. 1 Blount Decker, 900 ft. E of E line of S. Selman Sur. and 1,200 ft. S of N line of E. M. Decker 406-ac. tract in George Ruddle Sur.	Drlg. 3,450 ft.
Walton Oil Co.'s No. 1 E. Singletary, 250 ft. W and 150 ft. N of NE cor. of M. Lacey Sur. and in Water Sur. on Singletary 84-ac. tract	Shut down 2,000 ft.

DELTA COUNTY

Delta Development Co.'s No. 2 Hays Kinney, 300 ft. S of No. 1 Cooper, Townsite Sur.	Coring 2,865 ft.
D. S. Hoods' No. 1 J. J. Baiser, 185 ft. from S and 680 ft. W of Baiser 40-ac. tract in SE cor. T. B. Laddin Sur.	Shut down 1,559 ft.
Worthington and Stedman's No. 1 W. H. Dejehett, 150 ft. from S and 776 ft. from W of 52-ac. tract, E. Chick Sur.	Shut down 2,300 ft.

GREGG COUNTY

Angle and Bytex' No. 1 C. R. Parker, 510 ft. from N and 150 ft. from E, James F. Dixon Sur.	Building derrick.
Arkansas Fuel Oil Co.'s No. 1 W. L. Hestland, 150 ft. from E and 150 ft. from NW (Road) of 31.3-ac., Dolores Sanches Sur.	Rig up.
Arkansas Fuel Oil Co.'s No. 2 P. D. Harrison, 282 ft. S and 143 ft. E of SE cor. of Tenery 40-ac. tract, William Robinson Sur.	Derrick pattern.
P. P. Ash et al's No. 1 A. H. Tubbs, 1,550 ft. from S and 4,120 ft. from E of survey, Dolores Sanches Sur.	Derrick.
Badgett and Cooper's No. 1 C. C. Clemons, 155 ft. from E and 155 ft. from S of 60-ac. tract, Dolores Sanches Sur.	Derrick.
Bell & Graddy's No. 1 M. George (or Daniels), 225 ft. S and 650 ft. W of 26-ac. tract, Mary Van Winkle Sur.	Fishing; T. D. 2,719 ft.
Blackwell Oil & Gas Co.'s No. 1 Mrs. Maggie Magrill, 4,250 ft. from S and 6,500 ft. from W of survey, Dolores Sanches Sur.	Set 6-in. csg.; T. D. 3,641 ft.
Buler and Beeler's No. 1 Anderson, 150 ft. from W of 50-ac. tract, Charles H. Alexander Sur.	Derrick pattern.
B. L. Brookin's No. 1 J. M. Tuttle, 150 ft. from N and 205 ft. from E of 12½-ac. lease, William H. Castleberry Sur.	Derrick.
W. H. Byrd, Jr.'s No. 1 Art Mitchell, 150 ft. from E and 150 ft. from S of 15-ac. lease, 1,300 ft. from S and 850 ft. from E of survey, John Carithers Sur.	Set 6⅝-in. csg.; T. D. 3,545 ft.
D. H. Byrd and Gulf Prod. Co.'s No. 1 Canimaras Bros., 5,505 ft. from NW, 1,528 ft. from NE of 817.6-ac. tract, 1,829 ft. from N. 2,505 ft. from W of survey, Harden Edwards A-64 Sur.	Rig up and shut down.

(Continued on Page 92)

Second Well in Northern Ector County

New Test in Irion County to Seek Deep Pay Found in Big Lake Field. Wheat Pool Extended. Wichita's Deep Test

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 20.--The most interesting test in the Permian Basin, Southern Crude Oil Purchasing Co.'s No. 2 Cowden in Section 34, Block 43, Township 1n, T.&P. Survey, northern Ector County, is now being tubed for completion after flowing 451 bbls. in 24 hours when tested. It is a much better well than its predecessor, the discovery well of this pool which is held in its entirety by one company which will go slow in producing it.

The well encountered the first oil at 4,120 feet and the main pay at 4,217 feet, previously logging gas from 4,045-50 feet, making an estimated 8,000,000 feet. Total depth of the hole is 4,302 feet. The discovery well was completed for an initial production of 275 bbls. per day, but has been pinched to around 40 bbls., the oil going to storage, there being no pipe line connection for the two wells. The company will no doubt build its own outlet to a loading rack on the T.&P. Railroad, several miles south, when it is desired to run the oil.

Arrangements are reported being made to resume drilling in H. F. Wurtz' No. 1 E. A. Ibbetson, which shut down January 4 with a showing of oil. New interest in this area was given by the announcement by the Rector Oil Co. of the location for its No. 1 Smith, in the northeast corner of Ward County and 2¼ miles west of the west side of the Gulf's 77,000-acre lease block, at the south end of which the J. B. Tubbs well is located. Contract for the No. 1 Smith has been let to the Eastland Oil Co. and it has announced drilling is to start early in May. This well is 1,320 feet from the north and east lines of Section 22, Block A, G.M.M.B.&A. Survey, and is 16 miles from the nearest production in the Penn-Humble Ector County Pool.

Irion County Test

Another important test for Irion County is to be drilled by Benedum and Trees on the J. D. Sugg heirs ranch in Section 3,081, Block 28, H.&T.C. Survey. The test will be drilled in an effort to pick up the deep pay horizon from which deep production is gained in the Big Lake Field, in the adjacent county to the west, Reagan County. The test may go to 8,000 feet.

The company, which has done much wildcatting in the Permian Basin, recently purchased a 15,642-acre block on the Sugg ranch, and the test will be in the south central part of this block, approximately 15 miles northwest of Mertzon. B. F. Agnew & Son of Texon, who have drilled several of the deep wells in the Big Lake Field, have been awarded the contract on this deep test.

Stanolind Oil & Gas Co.'s No. 1 Williams in Section 1,196, T. T. Survey, Irion County, is drilling at 4,645 feet in black shale and lime shells with no increase in production. Two weeks ago it picked up a deep pay at 4,153-63 feet and filled 300 feet with oil in three hours, becoming especially interesting to those who are watching deep drilling in this county.

The Wheat Pool, Loving County, which has been one of the most active areas in West Texas for the past four months, was extended approximately three-quarters of a mile north this week when Eppenauer's No. 1 Salisbury in Section 89, Block 1, W.&N.W. Survey, flowed 132 bbls. the first 24 hours on April 18 after shooting with 190 quarts from 4,343-82 feet. It is now being cleaned out to deepen and be given a second shot. The test was drilled to a total depth of 4,384 feet without striking water, but was plugged back to 4,382 feet before shooting. Elevation is 2,786 feet. The Delaware lime was topped at 4,343 feet.

Gulf Production Co.'s No. 1 Tubb on the western side of Crane County is shut down at 5,336 feet. It will probably be plugged back and given a shot in the pay which was encountered October, 1930, at 4,295 feet, and from which the well flowed 117 bbls. in 13 minutes when opened after standing shut in for two days.

Wichita Falls District

The Deep Oil Development Co.'s No. 1 Munger in Wichita County is now swedging pipe which was split by six shots in the six individual pay horizons which were formerly logged. The shot split a joint of casing at 1,915 feet. Six and five-eighths-inch casing will be run. The shots were placed to shoot lime from 3,675-97 feet, 3,717-40 feet, 3,895-11 feet, 3,926-42 feet and 3,801-08 feet. The well is estimated good for from 250 to 350 bbls. daily, and has caused considerable new interest in this area.

The Texas Company's wildcat on the L. K. Johnson farm in Section 363, Block 1, S.P. Railroad Survey, Foard County, is drilling below 3,620 feet. This test encountered a gas sand from 3,552-58 feet, striking an estimated 25,000 feet. At 3,565-82 feet it encountered another gas sand which tested 2,384,000 feet, and from 3,614-18 feet it struck an estimated 6,000,000 feet.

WEST TEXAS PRODUCTION
Week ending April 18

County—	Wells	Bbls.
Andrews	3	95
Crane	376	18,690
Crockett County	51	1,605
Ector	77	6,360
Fisher	10	724
Garza	...	20
Howard-Glasscock	539	29,070
Irion	3	70
Jones	79	1,266
Loving	39	3,420
Mitchell	111	2,038
Pecos	542	35,750
Reagan	255	35,127
Runnels	5	104
Scurry	5	5
Upton	258	5,411
Taylor	2	76
Ward	56	3,492
Winkler	595	45,881
Total production this week		239,204
Total production last week		245,368
Decrease		6,164

COMPLETIONS FOR NORTH CENTRAL TEXAS

Clay County

Belcher and others' No. 9 Evans, dry and abandoned, total depth 1,802 feet.

Cooke County

Gray-Tex Oil Co.'s No. 1 Riley, shot 15 quarts 1,545-67 feet, initial production 5 bbls. oil and 1 bbl. of water, total depth 1,573 feet.

Grayson County

F. H. E. Oil Co.'s No. 1 Conn, dry and abandoned, total depth 1,095 feet.

Wichita County

Martin's No. 1 Logan and others, dry and abandoned, total depth 1,789 feet. Ledford Brothers and others' No. 1 Foster Allen, dry and abandoned, total depth 960 feet. The Texas Company's No. 1 398 Waggoner, dry and abandoned, total depth 1,053 feet.

Wilbarger County

Patterson and others' No. 1 Burgiss, temporarily abandoned, total depth 2,030 feet. Popp's No. 1 Waggoner, temporarily abandoned, total depth 1,486 feet. Easter Oil Co.'s No. 1 Waggoner, temporarily abandoned, total depth 1,850 feet.

COMPLETIONS IN RANGER DISTRICT

Brown County

Beasley and others' No. 1 Dabney, dry and abandoned, total depth 1,815 feet.

Callahan County

Bateman Co. and others' No. 1 Hayden, dry and abandoned, total depth 2,503 feet. Guffey and others' No. 2 Finley, dry and abandoned, total depth 722 feet. States Oil Corp.'s No. 1 Harris, gas sand 1,183-93 feet, initial production 1,920,000 feet of gas, total depth 1,193 feet.

Coleman County

Anzac Oil Corp. and others' No. 1 Brown and others, abandoned location. Carter and others' No. 1 Goodson, lime 3,581-3,608 feet, initial production 16 bbls. oil and 200,000 feet of gas, total depth 3,710 feet. Neversuch Oil Co.'s No. 2 Burkett, top sand 1,601-10 feet, initial production 375 bbls., total depth 1,610 feet. Shields and Arcadia Refining Co.'s No. 1 Barnett, abandoned location. Bartlett and Dozier's No. 1 Jennings, Ranger lime 2,156-2,244 feet, initial production 1,409,000 feet of gas, total depth

(Continued on Page 91)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended April 20

ANDREWS COUNTY

Company, well, farm name, section and block—	Remarks—
Deep Rock Oil Co. et al's No. 1 Kuykendall, 2,310 ft. from N and E of SW cor. Sec. 24, School Blk. A-46	Cleaning out; total depth 4,648 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E Sec. 11, Blk. A-46	Top pay 4,335 ft.; flows every 4 days; temporarily abandoned; total depth 4,454 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Shut down 1,935 ft.
H. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,302 ft.
Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 320 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur.	Total depth 2,800 ft.; shut down.
Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles S of Alpine	Shut down 1,750 ft.

COKE COUNTY

Reed, Hitchens et al's No. 1 Duncan, 1,980 ft. from S and 1,680 ft. from E of Sec. 239, Blk. 2, H.&T.C. Sur. (4,500-ft. cable test)	Shut down 30 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E Sec. 143, T.&N.O. Sur.	Shut down 267 ft.
Betts & Dennis' No. 1 H. E. Woods, 710 ft. from E and 150 ft. from S Sec. 3, H.E.&W.T. Sur.	Shut down 80 ft.
Turner et al's No. 1 Borsig, 150 ft. from S of NE cor. G. Emmig Sur. 130, 6 miles W of Paint Rock	Shut down 1,350 ft.

CRANE COUNTY

Cranfill Bros. and Gulf's No. 1 J. B. Tubb, 2,310 ft. from N and 330 ft. from E of Sec. 8, Blk. B-27, Public School Land	Fishing 5,336 ft.
E. H. Sides and others' No. 1 B. P. Nolen, 150 ft. from S and 150 ft. from W of N 160 acres, Sec. 3, Blk. 31, H.&T.C. Sur.	Straightening crooked hole 170 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Perner, 3,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur.	Spudded and shut down.

CULBERSON COUNTY

Cranfill Bros. and Sholts' No. 1 Seay, 2,310 ft. from S and W Sec. 45, Blk. 60, Public School Land	Shut down 2,062 ft.
Kornrumpf et al's No. 1 Garren, 330 ft. S and W Sec. 15, Blk. 79, Public School Land	Shut down 1,280 ft.

(Continued on Page 95)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending April 20

CARSON COUNTY

Company, well, farm name, section and block—	Remarks—
Deep Lake Oil Co.'s No. 1 Keys, NE cor. SW, Sec. 1, Blk. 4, I.&G.N. Sur.	Spud and S.D.
Interstate Prod. Co.'s No. 1 Coffee, C S½ NW, Sec. 15, Blk. 4, I.&G.N. Sur.	Rigging up standard tools.
North American O. & G. Co.'s No. 1 Burnett, 1,341 ft. S, 662 ft. E, of S E½, Sec. 80, Blk. 4, I.&G.N. Sur.	Spudded and S.D.
Red River Gas Co.'s No. 1-A Bennett, 660 ft. N, 660 ft. W, NW, Sec. 2, Blk. 5, B.&B. Sur.	Location.
Red River Gas Co.'s No. 5-A Bivins, 1,320 ft. S, 660 ft. E, Sec. 45, Blk. B-20, G.&M. Sur.	Drlg. 2,610 ft; gas 2,580-2,610 ft.
The Texas Co.'s No. 1 Schaffer, C SW, Sec. 68, Blk. 4, I.&G.N. Sur.	Drlg. 2,235 ft.
The Texas Co.'s No. 1 Bednarz, 317 ft. S, 172 ft. W, S 100 ac. of SW, Sec. 2, Blk. 4, I.&G.N. Sur.	Cmtd. 12-in. csg. 550 ft.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands	T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur.	U.R. 535 ft.

COTTLE COUNTY

Darby Oil Co. and Merry Bros. & Perrin's No. 1 Richards, 330 ft. NE, Sec. 13, B.S.&F. Sur.	Drlg. 3,800 ft.

GRAY COUNTY

Anderson et al's No. 2 Vollmert, 330 ft. N and W, SW, Sec. 140, Blk. 3, I.&G.N. Sur.	Rig.
Boyles et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 35, H.&G.N. Sur.	Spudded and S.D.
Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur.	S.D. 740 ft.
Cree Hoover & Traham's No. 1 Delmar, 330 ft. S line, 330 ft. W line, NW, Sec. 105, Blk. 3, I.&G.N. Sur.	Rig on ground.
Danciger O. & R. Co.'s No. 1-A Barrett, NW cor. S½ NE, Sec. 128, Blk. 3, I.&G.N. Sur.	Drlg. 2,723 ft.
Danciger O. & R. Co.'s No. 1-B Barrett, SW cor. N½ NE, Sec. 128, Blk. 3, I.&G.N. Sur.	Drlg. 2,369 ft.
Danciger O. & R. Co.'s No. 1 Sullivan, 231 ft. N, 224 ft. W, of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur.	S.O. 3,134-65 ft. and 2,210-17 ft; estimated 2 bailers; T.D. 3,265 ft.
Danciger O. & R. Co.'s No. 1 Barnett, 231 ft. S, 330 ft. W, E½ of N 56 ac., Sec. 136, Blk. 3, I.&G.N. Sur.	S.D. 3,097 ft; 5,000,000 ft. gas 3,097 ft.

(Continued on Page 95)

California Fuel Oil Market Is Brighter

In Contrast to Prospects for Markets for Light Refinable Crude and Gasoline on Pacific Coast. Situation Easily Upset

By L. P. Stockman

LOS ANGELES, Calif., Apr. 19.—Although the recent drastic price reductions in California crude and refined oils have resulted in a rather chaotic condition, a bright light has appeared on the horizon and it looms up like an aviation beacon on a dark night. This is the encouraging symptom that California will experience a satisfactory fuel oil market for the rest of this year unless something unforeseen develops. This possible improvement in the fuel oil market appears probable in spite of the fact that there does not seem to be much encouragement for any immediate substantial improvement in the outlook for light refinable crude oil and gasoline. Senator Will R. Sharkey's conservation measure, Senate Bill No. 362, would undoubtedly help producers of light crude by limiting production to actual requirements, but so much opposition has developed to the original provisions of the bill its future status is problematical. The senate committee which has been conducting an investigation and hearing on the bill has made a favorable recommendation subject to minor amendments.

Less Heavy Crude

It might not be amiss to mention, while commenting on the probable favorable fuel oil market, that this is not due to any sudden abnormal gain in the demand for this commodity but can be attributed primarily to a substantial decline in the production of heavy crude oil and a consistent reduction in production of refinery residuum. The condition of the fuel oil market during the next year or so therefore rests with producers of heavy unrefinable crude oil because it is within their province either to make it or break it. This is particularly important in view of the fact that crude oil curtailment has been an important factor contributing to the partial recovery of the fuel oil market. Any general relaxation in curtailment will have an adverse effect on the demand for fuel oil and result in a consequent unfavorable market for heavy crude. Conditions would be immeasurably better if producers of light crude oil had made a more stringent curtailment in production as the outcome would have been somewhat comparable with the results achieved by heavy oil producers.

The prognostication that a favorable fuel oil market is in the offing has a basis in fact but it must be remembered it will require extreme care to prevent another general breakdown as the present degree of stability is by no means permanent. Any resumption of drilling operations in fields yielding heavy oil or in areas producing oil from which a high recovery of residual fuel is recovered will sooner or later weaken the fuel oil market. Projected deep zone development in the Huntington Beach town lot area may complicate conditions later but it is unlikely sufficient crude oil will be produced in this field during the next six months to cause any severe change in the present outlook. It may be possible, of course, that deep zone development will become of more importance than expected but in any event it will be late this year before it will exert any great influence on the fuel oil market.

Explanatory Table

The accompanying table showing production of crude oil, refinery operations and stocks at the end of each month partially supports the expectation that a satisfactory fuel oil market will be experienced this year unless subsequent drilling upsets the present artificial equilibrium during the latter part of the year or early in 1932. Attention is directed to the consistent decline in crude oil production during 1930. This is especially marked in the output of heavy oil, as indicated by the fact that the production of 2,114,153 bbls. in February, 1931, is approximately 33 per cent lower than the 3,162,939 bbls. chalked up in February, 1930. Production of heavy oil during January, 1931, approximated 2,345,005 bbls., compared with 3,453,373 bbls. in the same month last year. Production of light refinable crude also reflected substantial curtailment during 1930, although a large part of this drop can be attributed to a normal decline in flush fields.

A substantial decline in the production of refinery residuum during 1930 is another factor lending credence to the opinion that a satisfactory fuel oil market may be anticipated during the remainder of this year and possibly extending over into 1932. Although no segregation is available showing the production of refinery residuum separate from gas oil and Diesel oil during 1929, the accompanying tabulation reveals a very definite decrease in the production of residual fuel oil during the year 1930 and up through the first two months of 1931. During January, 1930, California refiners produced 8,827,756 bbls. of residuum, compared with only 6,036,022 bbls. in January, 1931. This represents a drop in production of refinery residuum of approximately 32 per cent between the two periods. Similar figures for February, 1930, and February, 1931, reveal a decline in residuum production of approximately 33 per cent.

Reduction in Residuum

The substantial reduction which has taken place in the production of refinery residuum during the past year reflects a corresponding drop in the amount of crude oil run to stills and a proportionate gain in the amount of stock charged to cracking units. During 1930 California refiners ran 204,827,472 bbls. of crude oil to stills, compared with 243,233,307 bbls. in 1929. Detailed figures indicate a consistent decline from month to month during both 1929 and 1930 and this has continued through January and February of the current year. Crude run to stills totaled 19,334,698 bbls. in January, 1929, compared with 18,367,130 bbls. in January, 1930, and 14,427,145 bbls. during January, 1931. Production of cracked gasoline showed a consistent increase during this period, jumping from a total production of 11,605,758 bbls. in 1929 to 16,045,506 bbls. in 1930. The operating status of cracking units will have decided effect on the fuel oil market during 1931 and, while it is a little too early to predict the amount of cracked gasoline which will be produced during 1931, the production of gasoline by cracking processes in January and February of the current year was in excess of the amounts produced by cracking in the first two months of any year. This tends to indicate that more gasoline will be produced by cracking during 1931, although this remains to be seen in view of the drastic reductions which have taken place in the price of gasoline on the Pacific Coast.

Determining Factors

The quantity and quality of crude oil which will be produced in California during 1931 and 1932 will be vital determining factors in the local fuel oil situation. There has been a very marked increase in the production of extremely light crude oil during the past year and this is expected to continue for at least another year or two. Beginning with 1920 and extending up to the present, the average gravity of crude oil produced in California has risen with each succeeding year. This is due to the development of Miocene production in Los Angeles Basin resulting from deep drilling after Pliocene production in the flush fields had been fully developed. The development of higher gravity oil by deeper drilling has characterized drilling operations in the Santa Fe Springs and Long Beach Fields of Los Angeles Basin and similar results may be expected when deep zone development is undertaken in the Dominguez, Inglewood and Coyote Fields.

In the San Joaquin Valley the development of prolific Temblor production at Kettleman Hills and Belridge has substantially increased the average gravity of proven reserves in that section. The effect of Temblor production at Kettleman Hills and in the Lost Hills-Belridge Fields will become more pronounced as the current production in these fields increases. Ventura Avenue and the Elwood Field of Santa Barbara County have greatly increased the average gravity of crude oil produced in the coastal region as the oil produced in this area previous to the development of substantial production in these fields was considerably lower in gravity.

If recent surveys are correct, California will continue producing extremely light oil with the result that the refinery production of residuum will be correspondingly smaller. This should greatly aid producers of heavy oil, although, as has already been mentioned, the existing market will not be able to sustain intensive drilling in any of the heavy oil fields throughout the State. It behooves producers, therefore, to exercise extreme care and effect a balance between supply and demand if satisfactory prices are to be received for heavy unrefinable crude. This is especially important because at the close of February, 1931, there was 102,147,813 bbls. of heavy unrefinable crude and refinery residuum in storage. To effect a stable market, refiners should be permitted to liquidate these excess stocks over a period sufficiently long enough to prevent a general breakdown in prices. This is particularly important as the income of refiners is derived approximately 75 per cent from gasoline sales, 20 per cent from fuel oil and about 5 per cent from other petroleum products. It will be interesting to watch developments in California during the next several months as producers of heavy unrefinable crude will be in a position either to make or break the demand for fuel oil.

CRUDE OIL PRODUCTION AND OUTPUT OF CALIFORNIA REFINERIES

	Crude oil production			Refinery production					Stocks end of month			
						Gasoline					Gasoline	
1929—	Over 20°	Under 20°	Crude oil to stills	Refinery residuum	Gas oil and Diesel*	Natural	Cracked	Straight	Heavy crude and fuel	Gas oil and Diesel*	Natural	Balance
January	20,243,025	3,142,914	19,334,698	11,682,896	.....	1,284,960	855,200	4,934,995	99,832,300	.....	1,243,252	9,229,261
February	19,488,865	2,811,842	17,157,738	10,508,164	.....	1,291,335	768,620	4,050,824	100,429,185	.....	1,335,594	9,272,443
March	21,307,700	3,017,029	19,628,611	12,015,507	.....	1,567,408	876,615	5,132,021	101,477,781	.....	1,311,111	10,466,488
April	20,537,724	2,757,336	19,338,592	11,566,056	.....	1,544,994	847,025	4,968,247	101,650,616	.....	1,395,952	11,041,078
May	21,239,401	2,813,950	19,857,603	11,612,294	.....	1,562,267	893,812	4,885,162	102,807,299	.....	1,511,195	10,646,326
June	21,867,423	2,757,204	20,463,299	11,752,978	.....	1,601,609	888,286	4,874,679	104,659,397	.....	1,542,019	10,901,087
July	23,706,068	3,090,559	22,602,881	13,257,539	.....	1,756,294	880,645	6,169,316	106,403,213	.....	1,606,850	11,018,758
August	24,219,453	3,013,900	22,033,698	13,782,934	.....	1,778,275	981,688	6,946,098	109,052,646	.....	1,450,928	11,714,507
September	23,326,490	2,877,774	20,960,784	12,592,616	.....	1,737,878	1,049,573	5,275,062	110,778,145	.....	1,425,075	12,036,484
October	23,702,470	3,193,690	22,708,620	13,279,086	.....	1,895,206	1,135,564	5,901,508	112,271,232	.....	1,350,075	13,324,960
November	18,059,496	3,258,044	19,444,018	11,085,186	.....	1,577,040	1,163,162	5,073,038	111,961,491	.....	1,390,363	13,762,514
December	18,467,559	3,237,995	19,702,765	11,490,590	.....	1,548,930	1,265,568	4,986,018	112,905,196	.....	1,201,422	14,135,604
Total	256,065,674	35,971,237	243,233,307	144,525,846	.....	19,146,196	11,605,758	63,196,968	.....	.....	.....	.....
1930—												
January	18,529,869	3,453,373	18,367,130	8,827,756	1,804,990	1,661,887	1,264,248	4,820,284	107,109,383	5,281,975	1,440,375	16,423,118
February	17,722,721	3,162,939	16,395,183	8,061,763	1,468,807	1,640,393	1,100,454	4,238,199	108,099,486	5,180,953	1,711,587	16,777,185
March	16,730,959	2,969,020	17,342,877	8,154,879	2,165,507	1,665,783	1,045,756	4,597,188	107,594,814	4,986,364	1,885,836	16,435,462
April	15,726,069	3,042,674	17,465,917	7,966,781	1,974,708	1,586,743	1,052,932	4,619,230	105,511,355	5,617,194	1,940,240	16,317,141
May	16,157,849	2,886,595	17,721,713	7,861,287	1,822,311	1,659,161	1,203,025	4,784,439	105,279,790	5,924,852	2,197,723	16,575,343
June	15,173,472	2,847,323	18,010,732	8,076,427	1,692,958	1,555,235	1,396,938	4,801,792	105,006,656	6,271,771	2,036,276	15,462,262
July	15,997,228	2,804,796	17,440,839	7,809,625	1,696,743	1,630,398	1,587,907	4,682,340	104,170,002	6,129,660	1,818,432	14,997,741
August	15,987,314	2,783,152	17,273,706	7,755,853	1,340,238	1,639,959	1,457,568	4,650,827	103,315,081	6,114,526	1,800,777	14,891,532
September	15,365,354	2,618,952	16,222,962	7,241,896	1,676,482	1,530,642	1,547,486	4,367,593	103,230,640	5,948,694	1,720,576	14,736,364
October	15,596,097	2,647,956	16,142,051	6,830,405	1,831,505	1,598,645	1,680,112	4,615,971	102,271,664	5,490,924	1,441,497	15,507,735
November	15,553,922	2,555,537	15,899,936	7,139,843	1,673,415	1,628,822	1,208,275	4,099,452	103,003,065	5,602,685	1,445,615	15,925,050
December	15,325,397	2,461,331	16,544,426	7,344,999	1,890,395	1,586,331	1,500,805	3,932,895	103,194,478	4,491,295	1,894,337	16,237,738
Total	193,866,251	34,233,648	204,827,472	93,071,614	21,038,060	19,383,999	16,045,506	54,210,210	.....	.....	.....	.....
1931—												
January	14,140,733	2,345,005	14,427,145	6,036,022	2,161,994	1,527,745	1,327,427	3,338,516	103,132,222	4,466,377	1,571,605	16,486,737
February	12,816,779	2,114,153	12,734,586	5,414,865	1,538,011	1,280,262	1,132,273	3,242,945	102,147,813	4,395,730	1,397,851	16,757,041

*Gas oil and Diesel included with residuum previous to 1930. 1930 figures subject to slight changes.

Pipe Line Construction News

PIPE LINE EXPANSION IN EAST TEXAS AREAS

FORT WORTH, Tex., Apr. 20.—The Republic Production Co. is laying a 6-inch line from its Christian lease in the Kilgore area, northern Rusk County, East Texas, to a 40-car loading rack on the I.&G.N. Railroad, another outlet for the pool, and Cranfill-Reynolds are building a 50-car loading rack on the T.&P. Railroad near Willow Springs in Gregg County, and constructing a gathering system which will extend to all three pools in Gregg and Rusk Counties. Pipe for these lines was ordered two weeks ago; 7 miles of 8-inch and 10 miles of 10-inch being purchased at that time, with sufficient pipe to serve as gathering lines. Five 55,000-bbl. tanks will be constructed on the company's lease on the Elsie Calvin farm in the Marshall Mann Survey in Gregg County.

The Arkansas Pipe Line Co. has material on the ground for three 55,000-bbl. tanks in the Lathrop Pool, Gregg County, and has laid approximately 15 miles of 8-inch line on its Gregg County-Shreveport carrier.

The Sun Oil Co. has purchased a loading rack site on the S. S. Laird farm in the Ruddle Survey, Kilgore Pool, and will build a proposed 30-car loading rack on the I.&G.N. Railroad on this tract. It is also reported that the company would build a trunk line to the coast, but this has not been confirmed. Size of line and when construction would start, is not known.

The Gulf Pipe Line Co. started running oil this week from the Kilgore area through its 8-inch lateral to the company's main line which runs within a short distance to the west of the pool.

The Stanolind Pipe Line Co. is constructing a 60-car loading rack on the Laird lease of the Stanolind Oil & Gas Co., and a short gathering line will serve the lease and connect with the rack.

The new 6-inch line of the East Texas Refining Co. from the Lathrop area, Gregg County, to its refinery and loading rack at Longview, started running oil on April 16 and the company's refinery at that place started processing crude oil on April 17. A 6-inch line from the company's Rodden lease in the John Ruddle Survey, Gregg County, to the Kilgore Pool, is practically completed and will start running oil within the next few days. A 6-inch line is also being laid by the company from its refinery at Friars Switch north of the Joiner Pool on the I.&G.N. Railroad to the western part of the pool; heretofore the company has been taking oil from other companies' lines from the pool.

Another trunk line has been rumored for the Kilgore and Joiner Pools, to be constructed by the Ohio Oil Co. which is operating in the new pools under the title of Mid-Kansas Oil & Gas Co., a subsidiary, which has production in the latter pool, and scattered leases in the three areas.

Rapid progress is being made by the Arkansas Natural Gas Co. on its 8-inch oil line from Shreveport to its production in Gregg County. The line is approximately 70 miles in length and stringing has been completed for 49 miles and welded 45 miles. Pipe has been lowered for 29 miles and backfilled to the 27-mile post. It is an acetylene welded job. Ford, Bacon & Davis of New York are the contractors.

The Atlas Pipe Line Co., Inc., has 50 per cent of its 8-inch line from Shreveport to East Texas completed. Simmons & Nusser have the contract for the first 14 miles out of Shreveport, the remainder being done by the Atlas company. It is an electrically welded job.

ATLANTIC REFINING CO. PLANS GASOLINE LINES IN PENNSYLVANIA

PHILADELPHIA, Pa., Apr. 18.—The Atlantic Refining Co. is planning the construction of gasoline pipe lines to cover important distribution centers in Pennsylvania. This became known following the incorporation of the Keystone Pipe Line Co., a Pennsylvania corporation, wholly owned by officers of the Atlantic Refining Co.

The first proposed line will run from the company's refinery in southwest Philadelphia to Harrisburg and Scranton and then to the New York-Pennsylvania State line. Another possible line may run to Pittsburgh and Franklin, Pa., where the Atlantic also has refineries.

R. H. Colley, treasurer of the Atlantic Refining Co. said construction of the Harrisburg-Scranton line will be started as soon as possible.

The application to the public service commisison for the franchise has been made by J. W. Van Dyke, W. M. Irish and R. C. Tuttle, who are officers of the Atlantic Refining Co. They propose to incorporate the Keystone Pipe Line Co. the object of which is to transport and store crude petroleum and refined petroleum products. J. W. Van Dyke, chairman of the board of the Atlantic Refining Co., is president of the Keystone Pipe Line Co., and W. M. Irish, president of the Atlantic, is vice president.

A public hearing on the application will be held at Harrisburg on April 30. An application will be made to the governor for a charter at 2 o'clock on April 23. In their application the notice gives the following description as to routes and destinations:

Beginning at or near the vicinity of Point Breeze, Pa., in the county of Philadelphia, extending in a northerly direction to the Pennsylvania-New York state line, at or near the vicinity of the city of Susquehanna, in the county of Susquehanna, with connecting pipe lines therefrom, including a connecting pipe line from or near the vicinity of Port Clinton in Schuylkill County, to or near the vicinity of Allentown in Lehigh County, and other pipe lines beginning at or near the vicinity of Point Breeze, in the county of Philadelphia, and or connecting pipe lines beginning in the county of Berks extending in a westerly direction to the Pennsylvania-Ohio state line, at or near Bessemer in the county of Lawrence, with connecting pipe lines therefrom including a connecting pipe line from or near the vicinity of Lebanon, in Lebanon County, to or near the vicinity of Lancaster, Lancaster County. Said pipe line, or pipe lines or connecting pipe lines, to extend through or into the counties of Philadelphia, Chester, Delaware, Berks, Montgomery, Bucks, Schuylkill, Lehigh, Carbon, Northampton, Luzerne, Lackawanna, Wyoming, Susquehanna, Bradford, Sullivan, Columbia, Montour, Lycoming, Snyder, Northumberland, Lancaster, Adams, York, Lebanon, Dauphin, Indiana, Cumberland, Perry, Juaniata, Mifflin, Blair, Franklin, Bedford, Huntingdon, Cambria, Somerset, Westmoreland, Beaver, Butler, Allegheny, Lawrence, Mercer, Crawford, Venango, Green, Erie, Fayette, Washington, Armstrong, Fulton and Union, and by such route or routes as may now or hereafter be approved by the public service commission.

Completion of the Atlantic Refining Co.'s gasoline pipe line construction project will knit together its refineries at Point Breeze, Pittsburgh and Franklin, and thoroughly consolidate its gasoline distributing system in the important eastern marketing territory which the company serves.

Route of proposed gasoline pipe line of the Atlantic Refining Co. and the lines of the Standard Oil Co. (New Jersey) and the Sun Oil Co.

LINE TO FORT WORTH FROM AMARILLO FIELD

PITTSBURGH, Pa., Apr. 20.—Financing of a $7,000,000 pipe line project from the Panhandle district to the city gate of Fort Worth, Tex., has been arranged for the Shamrock Natural Gas Co., a subsidiary of the Shamrock Oil & Gas Co.

J. B. Orr, of Shamrock Oil & Gas Co., said: "If the 245-mile project is carried out the pipe will be furnished by Spang, Chalfant & Co.

FORD, BACON & DAVIS FORM NEW SUBSIDIARY

Ford, Bacon & Davis Construction Corp. has been formed as a wholly owned subsidiary of Ford, Bacon & Davis, Inc. to handle all contract construction activities for the entire organization. The new company was organized under the laws of New York State and will have executive offices at 39 Broadway and field offices at Dallas, Tex.

Officers of the company are Edgar G. Hill, president; James F. Towers and William von Phul, Jr., vice presidents, and Henry F. Storck, secretary and treasurer. Mr. Hill and Mr. Towers are also vice presidents and directors of the parent organization. Mr. von Phul, Jr., will manage the Dallas office of the new company and direct its field activities in oil and gas pipe line projects.

Projects now under construction by Ford, Bacon & Davis, Inc. include the last link of the 960-mile Texas Panhandle-Chicago natural gas pipe line, a section 155 miles long; the East Texas-Shreveport oil pipe line for a Cities Service subsidiary and the Western Gas Co. development. The organization also built the third section in the Texas-Chicago line.

SAN ANGELO LINE

HOUSTON, Tex., Apr. 20.—The 78 miles of 12-inch gas line has been laid from San Angelo to the Big Lake Field, Reagan County, and the line tested for 400 pounds pressure per square inch, with a working pressure of 225 pounds contemplated for present use, and the capacity of the line can be depended upon for 17,000,000 feet of gas per day and above. Engineers planned this line with future needs of San Angelo in mind, providing for a steady growth of the city for the next 10 years.

Forty miles of 8-inch line from the same field to Rio Pecos is also practically completed and ready for testing. The two lines will transport sweet gas from the high gravity deep producing wells in the Big Lake Field. The Texas Public Service Co. (Oklahoma Natural Gas Corp.), which has been serving San Angelo with gas piped from Coleman County, is the owner of these two new lines connected with the Big Lake Field.

KEYSTONE PIPE LINE CO.

ERIE, Pa., Apr. 20.—The Keystone Pipe Line Co. is being organized and incorporated, under the laws of Pennsylvania, to construct, maintain and operate a system of underground pipe lines throughout the State of Pennsylvania for the transportation of petroleum and allied products. Principals of the new concern are John H. Stone, 260 South Broad Street, Philadelphia, Pa., and Frank M. Hunter, Gibson Building, Chester, Pa.

TEXAS PIPE LINE HEARING

The Texas Railroad Commission will hold hearing on May 8 on the pipe line tariff in Texas, in response to petition of the Independent Petroleum Association.

Gasoline Tax Invites Gross Cheating

J. H. Hill Declares If Motorist Handed Money to Tax Collector Instead of to Filling Station the Law Would Be Repealed

By Thomas F. Smiley

"If the State had in every filling station a tax collector who took 5 cents a gallon from each motorist as he had his tank filled the tax would be repealed at the next legislative session," declared J. H. Hill, chief attorney of The Texas Company in Oklahoma and Kansas, in an interview in which he analyzed the growth of the gasoline tax as a revenue producer and the evils rising from evasion of the tax. This form of tax dodging, he asserted, has become a racket comparable with bootlegging and other criminal operations.

Mr. Hill gave the subject of gasoline taxation special study in connection with the recent action of the Oklahoma legislature in raising the tax from 4 cents a gallon to 5 cents. His investigation revealed conditions inimical to the taxpayer, who must foot the bills; to the State, defrauded of revenue which the law is designed to provide; and to the law-observing refiner, staggering under a handicap imposed by the mounting gasoline tax and the advantages it gives to dishonest competitors who avoid paying it. Mr. Hill pointed out that a large refining company cannot cheat the tax collector, even if it were not deterred by moral considerations, for the reason that it would have to perpetrate the trickery through its employes. If the company were to direct its employes to aid in swindling either the State or the company's patrons the same employes would not scruple to cheat the company itself at every opportunity. The very considerations which ordinarily operate to make an employe loyal and anxious to give his best service would be removed. Thus it comes about, Mr. Hill said, that the major refiners are peculiarly the victims of the gross tax evasions.

Startling Testimony Given

Hearings before the senate committee on revenue and taxation in Oklahoma brought out the startling testimony, Mr. Hill said, that under the 4-cent gasoline tax in that State there was 10 per cent evasion and with the increase to 5 cents there was expected to be still greater evasion. This one-tenth of the gasoline consumed in Oklahoma without payment of the tax was for the most part either that sold by dishonest refiners or natural gasoline plant operators who thus gained a tremendous advantage over law-observing competitors, or it was that obtained through subterfuge by consumers not entitled to immunity from the tax. This gasoline sold without the encumbrance of the tax which the legitimate dealer must add to the price he receives for his product demoralizes the market and upsets the whole refining and marketing branches of the oil industry. Besides this, the State suffers enormous loss through failure to get taxes due it.

"The first gasoline tax law was enacted a little more than 10 years ago and the first tax was 1 cent per gallon," continued Mr. Hill. "The gasoline sales were made by a small number of reliable marketing companies which collected the tax by adding the amount of it to the cost of the product and remitted to the state treasury. It was not necessary to set up any machinery to collect the tax. It was self-collecting, as the State forced the collection onto reliable concerns without remuneration. From a politician's standpoint, it was an ideal tax, as it was collected without expense and the people scarcely realized they were being taxed. There may have been some complaint as to the price of gasoline, as there is now, but little complaint as to the tax.

Then the Rush for Easy Money Began

"A tax so easily collected, yielding such large returns and resulting in so little complaint against the state and politicians, must naturally bring on excesses. The tax idea swept the country like wild fire. Every session of the legislature in every state, regular or special, has increased the tax until now it is from 33⅓ to 50 per cent of the retail price of gasoline. The people do not yet realize that the greatest item in the price of gasoline is tax, and that the tax now far exceeds the combined profit of every agency having to do with the product from the well to the consumer. As a result, the state and politicians still escape blame, but the manufacturer and marketer, the unwilling tax collectors, are cursed on account of the price of gasoline. If the state had in every filling station a tax collector who took 5 cents a gallon from each motorist as he had his tank filled the tax would be repealed at the next legislative session.

"Excessive taxation must always bring on tax evasions. If ad valorem taxes exceed the income return of property, the owner will not pay and the property loses all value and will not sell for the amount of the tax. As a result, while the owner loses his property, the state also loses the tax. When special or sales taxes are placed on an article amounting to a large proportion of its value, evasions immediately grow up. On account of the exorbitant tax now placed on gasoline by Oklahoma and other states, gasoline tax evasion has grown into a racket comparable with bootlegging and other criminal operations. The profit of evading the tax on one tank car of gasoline, depending on the size of the car, is from $400 to $500. Evading the tax has become more profitable than bank robbery or bootlegging, the penalties are not so severe and no one has ever heard of a conviction for evading this tax.

So They Just Added Another Cent

"During the last session of the Oklahoma legislature, as some easy and quick money was needed for the poor and to buy seed for indigent farmers, a bill was passed to increase the gas tax from 4 to 5 cents a gallon. While the bill was pending in the senate a hearing was had before the senate committee on revenue and taxation, at which it was brought out that there were wholesale tax evasions throughout the State; that probably 50,000 gallons of gasoline a day was brought into Oklahoma from Texas points by trucks on which little tax was paid, that there were equal importations from Kansas; that 186,000 gallons of kerosene a month was consumed in Oklahoma County (against 76,000 gallons in Tulsa County), which must largely go into gasoline blends, on which no tax was paid; that bootlegging was common in all the producing sections of the State from drips and gasoline plants; that trucks were standing along the roadside, improvised filling stations, from which was dispensed at cut prices gasoline on which no tax had been paid.

"Agents of the State who collect the gasoline tax testified that they believed evasions of the tax at the rate of 4 cents per gallon amounted to 10 per cent, and that an increase of the tax would increase the evasions. If the agents of the State were correct in their estimate of the evasions, this means a profit of over $1,000,000 a year in evading the tax. Shortly thereafter the attorney general wrote the governor, estimating the evasion at 20 per cent. If this is correct, it would raise the profit of the gasoline tax evasion racket to $2,000,000 per annum.

Farmers' Exemption Abused

"Evidence was introduced of abuse of the so-called farmer's exemption. It was testified that in some months in 1930 the exemption on this account was 4,500,000 gallons. The total exemption for the year reaching 24,182,179 gallons, a stupendous sum when you consider this exemption applies only to tractors and stationary engines actually used on farms and does not apply to tractors and stationary engines used in town or on the roads or in other occupations than farming. It was noted that in February, 1930, when the entire State of Oklahoma was covered with a blanket of snow and ice, the farmers' exemption amounted to approximately 1,000,000 gallons. Many of these abuses and evasions are due to the way the exemption is handled and the opportunity for abuse by the farmer and the dealer.

"Although the hearing before the senate committee did not result in preventing an increase in the tax to be in effect up to December 31, 1931, it did bring home to the State that it was losing vast sums in tax which was going to fatten and enrich the law violator and that as a result of its failure to enforce the law, it was perpetrating a great injustice on the law-abiding. If the State licenses and empowers Dick, Tom and Harry to go out and collect taxes for it and in its name and then allow one of them to embezzle the money and thereby make his business so profitable that he can cut prices and put the others who pay the tax out of business, it is more unjust than the tyrants of old, and in addition to being unjust, permits the bootlegger to monopolize the business and the State thereby loses its revenue.

Competition with Evaders Impossible

"This hearing likewise brought home to

ENGINEERING COMMITTEE REPORTS ON OPERATIONS IN HOBBS POOL

By L. G. E. Bignell
Petroleum Engineering Editor

The Hobbs (N. Mex.) Pool is an example of the trend of modern petroleum and production engineering practice as applied to an area where there is a large known oil reserve in the formation that is being retained there and brought to the surface in amounts equal to that district's share of the total production of oil for this country.

This is a prorated field and has been under strict regulation since its discovery and during the development stages so that there is approximately one well to each 40-acre tract, instead of one well to 10 acres or less, and by producing the wells through tubing and holding back pressures at the well head it has been possible to conserve the gas energy in the formation and by this method of operation it is thought that water encroachment has been retarded.

On March 25 the Hobbs engineering committee held a meeting in Midland, Tex., that was attended by 28 engineers representing the companies having acreage in that pool and two reports were presented and considered. It was decided that the production relation curve prepared for the field as a result of tests made last fall, and shown in the November 6, 1930, issue of The Oil and Gas Journal, is satisfactory for evaluating potentials for future production.

It was further agreed that the operators did not wish to test their wells by open flow methods and the curve will serve their needs until a better method of securing potentials can be devised.

Production Relation Curve

The production relation curve was based upon open flow data secured by producing the wells through tubing only and through tubing and casing, and, while some wells did not fall within the areas plotted along the path of the curve, it was found that there was definite mechanical reasons why many wells were of this "erratic" class. They were known as "erratic wells" and described as "those wells which do not approximate the original curve, and to those wells which, when tested through tubing only, increased or decreased sufficiently to make the curve reading of their open-flow potential vary considerably from the previous open-flow test."

There were 40 wells falling in this erratic class and a check showed that they fell into one of the following classes:

Tubing and casing and tubing flows were not taken simultaneously.

Completed with 6⅝-inch (O.D.) casing.

Completed with 8⅝-inch (O.D.) casing.

Erratic on account of high gas-oil ratios.

Erratic—probably for mechanical reasons.

Small wells outside the limits of the curve, due to more oil being produced through tubing than through casing and tubing.

Out of a total of 127 wells completed when the December curve was constructed, 28 were completed in such a manner that they could not be used in the construction of an average curve for 7-inch (O.D.) casing and 3-inch tubing. The remainder of the 40 (or 12) were erratic wells.

Doctor Vietti's Method

Dr. William V. Vietti of The Texas Company proposed a method of securing the ratio of tubing curve to actual tubing test that is based upon a test flow through the tubing to secure the "gas-oil ratio in thousands of cubic feet per barrel of oil" which was plotted as the base of the graph with the "Ratio of Curve Tubing to Actual Tubing Test" plotted at the left-hand vertical margin of the graph. When this point was established for a well it was checked against the production relation curve and in this way a number of the apparently erratic wells were eliminated.

In discussing means of securing the potential of these wells without resorting to open flow through casing and tubing it was suggested that the bottom hole pressure of the wells be secured and this used for determining the allowable production for each well. In the Yates Field, Pecos County, Texas, there has been considerable experimenting with bottom hole pressures and other fields have considered it.

There are various methods of securing this bottom hole pressure, but in Hobbs, it is intended to try out the Amerada pressure gauge and a discussion on this subject by M. Albertson, Shell Petroleum Corp., is quoted below:

"The taking of bottom hole pressures,

(Continued on Page 124)

the legitimate dealer (the one who pays the tax) that if he is to survive the law must be enforced and the gasoline tax evasion racket broken up. It did not take a very wise man to realize that competition with a tax evader who had an advantage of 5 cents per gallon to begin with was impossible. As a result, the legitimate dealers immediately began demanding that the tax law be enforced or repealed.

"The Oklahoma Tax Commission immediately prepared and had introduced in the legislature a gasoline tax enforcement act which was passed in the closing hours of the last legislature. The act is long, complicated and requires many reports and bristles with severe penalties. It is so complicated that few will hazard an analysis of the act. Some of its provisions are as follows:

"The first section broadens the definition of gasoline under the present law so that the term now includes anything used for motor fuel.

"Each distributor must be licensed and give bond to the State in the sum of $3,000. If the refiner sells to a licensed distributor, he is not liable for the tax, but if he sells to an unlicensed person in the State, he is liable. The refiner must report every sale within five days to the Oklahoma Tax Commission. As we construe the law, the refiner, to be safe, must obtain and keep an up-to-date list of licensed distributors so as to be sure he will not become liable for the tax. If the retailer buys from anyone not a licensed distributor, then he becomes a distributor and must give bond and pay the tax. This will make it necessary for every dealer who buys from outside the State to give $3,000 bond. As refiners located without the State are not subject to the law, this provision was necessary, as it would have immediately driven all Oklahoma business to outside refiners.

Railroads Must Make Reports

"Every railroad and common carrier must make a report to the Oklahoma Tax Commission of all shipments and deliveries of gasoline or motor fuel into the State. Each distributor shall report all sales, and every retail dealer shall make the same reports as required of the distributors.

"Cities and towns are prevented from levying further taxes, and provision is made for collection of tax from cities, towns and school districts, which heretofore have not paid the tax, having joined the army of tax evaders.

"These are only a few of the high spots in this remarkable law. It will force vast additional burdens and expense, on account of the additional accounting and reports required on the legitimate dealer, who obeys the law and pays the tax, for the purpose not of realizing a profit but for the purpose of aiding the State in the collection of the tax, and assuming that aversion which the public holds for a tax collector. The legitimate dealer wonders what the result will be. Will it result in enforcement of the tax and thereby protect him from the unfair competition of the bootlegger or tax evader, or will it by additional expense placed upon him merely hasten his end? Will the State collect the tax or will it continue to accept voluntary payments and reports from those who are law-abiding and let those who are resorting to tax evasions go free, making no reports and paying no tax? There are more than 26,000 retail stations in Oklahoma. Will the State provide a sufficient force of inspectors and auditors to see that these reports are made by every one engaged in the sale of gasoline in the State or put them out of business, or will it merely accept the reports from those who make them and then file them in a barrel?

Little Encouragement Seen

"The enforcement of the law in the past offers little encouragement to the legitimate dealer who pays the tax. A bond is required from dealers under the present law. More than 170 of these are now in default, but no suits have been brought on these bonds. Thirty of these are known to be in business still, but no prosecutions have been brought against them. Thousands of gallons of bootleg are produced every day in Oklahoma from drips and small gasoline plants, from refineries and elsewhere, but there are no prosecutions and apparently no effort is made to stop the gasoline tax evasion.

"Many contend that the profit in bootlegging has been made so great that enforcement is impossible; that where there are 26,000 retail dealers and one can set up a business overnight at street corner or roadside, and where improvised filling stations are made from trucks stopped on the highway anywhere, enforcement over so wide an area is impossible. They declare that the ultimate end of the industry, unless the gasoline tax is reduced, is in bootlegdom; that the only thing left to the concern which will not stoop to tax evasion is to lease its facilities and shut up shop.

"Some of the legitimate dealers are threatening to attack the law on account of the farmer's exemption, which was left in the new law unchanged. This is one of the great vehicles for tax evasion. It is asserted that this exemption is class legislation and makes the whole law void. This question will probably be litigated out in the courts. Others threaten to attack the whole act on the ground that its enforcement is so burdensome on the marketer that it is taking property without due process of law, and still others on the ground that it is discriminatory in its enforcement, that it is enforced with an 'evil eye,' suppressing the legitimate and building up the illegitimate, and is therefore void. Others threaten, if the law is not enforced and bootlegging not suppressed, to initiate a law repealing the gasoline tax law at the next general election.

"The unenforced gasoline tax is a great weight on the crude market. The crude market is made by those who pay the tax. They are continually in competition with the tax evader. Unless they can make a profit there is no hope of a better crude market."

INSTITUTE COMMITTEE REFINERY ESTIMATE

(Continued from Page 22)

supply for gasoline, crude oil and gas and fuel oils. (Page 22.)

Table No. 2—Method of estimating required refinery gasoline output by districts. (Page 22.)

Table No. 3—Method of estimating required crude runs to stills by districts. (Page 55.)

Table No. 4—Crude oil situation in the United States, April 1, 1931 to October 1, 1931. Gas and fuel oil situation east of California, April 1, 1931 to October 1, 1931. (Page 54.)

Table No. 5—Estimated required gasoline output by refinery areas. Estimated shipments of gasoline by refinery areas. (Page 54.)

Table No. 6—Consolidated statement of estimated gasoline production, shipments and stocks. (Page 55.)

Respectfully submitted, statistical subcommittee: John D. Gill, chairman; Fred Van Covern, secretary; W. C. Allen, Oliver S. Ambrose, H. K. Davis, Clarel B. Mapes, A. J. McIntosh, E. P. Salisbury, Warren Seinsheimer and Earl Wagy.

TABLE 4—CRUDE OIL SITUATION IN THE UNITED STATES
(Figures in Barrels of 42 Gallons)
April 1, 1931, to October 1, 1931
Based on gasoline stock situation as of October 1, 1931, of: 27,184,000 bbls.

	Total	Daily av.
Crude to stills	469,454,000	2,565,300
Exports	13,500,000	73,800
Used as such	17,000,000	92,900
Crude required	499,954,000	2,732,000
Imports	30,000,000	163,900
Needed United States supply	469,954,000	2,568,100

GAS AND FUEL OIL SITUATION EAST OF CALIFORNIA
(Figures in Barrels of 42 Gallons)
April 1, 1931, to October 1, 1931
Based on gasoline stock situation as of October 1, 1931, of: 27,184,000 bbls.

	Total	Daily av.
Crude to stills	469,454,000	2,565,300
California	79,479,000	434,300
East of California	389,975,000	2,131,000
Gas and fuel yield	35.25%	
Production	137,466,000	751,200
Imports	13,000,000	71,000
Intercoastal	1,200,000	6,600
Total supply	151,666,000	828,800
Total demand	142,000,000	776,000
Addition to storage	9,666,000	52,800
Stock April 1, 1931	26,500,000	
Stocks October 1, 1931	36,166,000	

GAS AND FUEL OIL SITUATION EAST OF CALIFORNIA
Gasoline Stock Basis 27,184,000 Bbls.

	Stocks Apr. 1, '31	Production	Supply Imports	Intercoastal receipts	Refinery shipments	Stocks Oct. 1, '31
East Coast	7,050,000	41,563,000	11,700,000	1,175,000	49,350,000	12,138,000
Appalachian	1,125,000	3,125,000	.....	.....	3,125,000	1,125,000
Ind., Ill., Ky.	3,150,000	16,675,000	.....	.....	13,575,000	6,250,000
Okla., Kans., Mo.	3,900,000	17,050,000	.....	.....	15,100,000	5,850,000
Texas	8,000,000	41,575,000	1,040,000	.....	45,200,000	5,415,000
Louisiana and Arkansas	2,400,000	14,025,000	260,000	25,000	12,550,000	4,160,000
Rocky Mountains	875,000	3,453,000	.....	.....	3,100,000	1,228,000
Total east of Calif.	26,500,000	137,466,000	13,000,000	1,200,000	142,000,000	36,166,000

TABLE 5—ESTIMATED PRODUCTION OF REFINERY GASOLINE NECESSARY TO ARRIVE AT 27,184,000 STOCKS OCTOBER 1, 1931
(Based on assumption that estimated refinery shipments of 245,127,000 bbls. Apr. 1, 1931, to Oct. 1, 1931, materialize) (Barrels of 42 gallons)

	East Coast	Appalachian	Indiana, Illinois, Kentucky	Oklahoma Kansas, Missouri	Inland Texas	North La.-Ark.	Texas Gulf	Louisiana Gulf	Rocky Mountain	California	Total United States
Apr., 1931	5,637,000	1,277,000	5,572,000	5,422,000	2,291,000	803,000	6,206,000	1,820,000	1,280,000	4,954,000	35,262,000
May, 1931	5,901,000	1,341,000	5,939,000	5,634,000	2,318,000	799,000	6,067,000	1,998,000	1,377,000	5,684,000	37,058,000
June, 1931	5,879,000	1,293,000	6,012,000	5,698,000	2,238,000	788,000	6,465,000	1,729,000	1,286,000	5,847,000	37,235,000
July, 1931	5,836,000	1,287,000	6,441,000	5,943,000	2,365,000	853,000	6,048,000	1,875,000	1,338,000	6,215,000	38,201,000
Aug., 1931	6,231,000	1,256,000	6,540,000	5,957,000	2,640,000	799,000	6,518,000	1,961,909	1,404,000	5,812,000	39,118,000
Sept., 1931	6,058,000	1,287,000	6,045,000	5,741,000	2,591,000	853,000	6,594,000	1,674,000	1,298,000	5,296,000	37,437,000
Total	35,542,000	7,741,000	36,549,000	34,395,000	14,443,000	4,895,000	37,898,000	11,057,000	7,983,000	33,808,000	224,311,000
Daily average	194,200	42,300	199,700	188,000	78,900	26,800	207,100	60,400	43,600	184,700	1,225,700

ESTIMATED SHIPMENTS OF GASOLINE FROM REFINERY PRODUCTION AND STOCKS USED IN THE ABOVE PRODUCTION ESTIMATES (Barrels of 42 gallons)

	East Coast	Appalachian	Indiana, Illinois, Kentucky	Oklahoma Kansas, Missouri	Inland Texas	North La.-Ark.	Texas Gulf	Louisiana Gulf	Rocky Mountain	California	Total United States
Apr., 1931	5,708,000	1,421,000	5,689,000	5,462,000	2,324,000	808,000	6,378,000	1,910,000	1,339,000	5,896,000	36,935,000
May, 1931	6,383,000	1,503,000	6,171,000	5,793,000	2,418,000	805,000	6,548,000	2,153,000	1,437,000	6,406,000	39,617,000
June, 1931	6,943,000	1,465,000	6,223,000	5,959,000	2,413,000	795,900	7,177,000	1,899,000	1,351,000	6,937,000	41,162,000
July, 1931	7,113,000	1,516,000	6,862,000	6,712,000	2,508,000	861,000	6,665,000	2,114,000	1,526,900	7,631,000	43,508,000
Aug., 1931	6,907,000	1,613,000	6,950,000	6,664,000	2,740,000	807,000	6,960,000	2,069,000	1,749,900	7,300,000	43,759,000
Sept., 1931	6,442,000	1,385,000	6,229,000	5,891,000	2,622,000	859,000	6,894,000	1,697,000	1,408,000	6,719,000	40,146,000
Total	39,496,000	8,903,000	38,124,000	36,481,000	15,025,000	4,935,000	40,622,000	11,842,000	8,810,000	40,889,000	245,127,000
Daily average	215,800	48,700	208,300	199,400	82,100	27,000	222,000	64,700	48,100	222,400	1,339,500

TABLE 6—CONSOLIDATED STATEMENT OF ESTIMATED GASOLINE PRODUCTION, SHIPMENTS AND RESULTANT STOCKS
(Based on assumption that 27,184,000 bbls. is adequate on October 1, 1931) (Barrels of 42 gallons)

Est. stocks—	East Coast	Appalachian	Indiana, Illinois, Kentucky	Oklahoma Kansas, Missouri	Inland Texas	North La.-Ark.	Texas Gulf	Louisiana Gulf	Rocky Mountain	California*	Total United States
Apr. 1, 1931	8,650,000	2,050,000	5,500,000	4,000,000	1,400,000	175,000	6,225,000	1,900,000	2,000,000	*16,100,000	48,000,000
Apr., 1931—											
Production	5,637,000	1,277,000	5,572,000	5,422,000	2,291,000	803,000	6,206,000	1,820,000	1,280,000	4,954,000	35,262,000
Shipments	5,708,000	1,421,000	5,689,000	5,462,000	2,324,000	808,000	6,378,000	1,910,000	1,339,000	5,896,000	36,935,000
Closing stocks.	8,579,000	1,906,000	5,383,000	3,960,000	1,367,000	170,000	6,053,000	1,810,000	1,941,000	15,158,000	46,327,000
May, 1931—											
Production	5,901,000	1,341,000	5,939,000	5,634,000	2,318,000	799,000	6,067,000	1,998,000	1,377,000	5,684,000	37,058,000
Shipments	6,383,000	1,503,000	6,171,000	5,793,000	2,418,000	805,000	6,548,000	2,153,000	1,437,000	6,406,000	39,617,000
Closing stocks.	8,097,000	1,744,000	5,151,000	3,801,000	1,267,000	164,000	5,572,000	1,655,000	1,881,000	14,436,000	43,768,000
June, 1931—											
Production	5,879,000	1,293,000	6,012,000	5,698,000	2,238,000	788,000	6,465,000	1,729,000	1,286,000	5,847,000	37,235,000
Shipments	6,943,000	1,465,000	6,223,000	5,959,000	2,413,000	795,000	7,177,000	1,899,000	1,351,000	6,937,000	41,162,000
Closing stocks.	7,033,000	1,572,000	4,940,000	3,540,000	1,092,000	157,000	4,860,000	1,485,000	1,816,000	13,346,000	39,841,000
July, 1931—											
Production	5,836,000	1,287,000	6,441,000	5,943,000	2,365,000	853,000	6,048,000	1,875,000	1,338,000	6,215,000	38,201,000
Shipments	7,113,000	1,516,000	6,862,000	6,712,000	2,508,000	861,000	6,665,000	2,114,000	1,526,000	7,631,000	43,508,000
Closing stocks.	5,756,000	1,343,000	4,519,000	2,771,000	949,000	149,000	4,243,000	1,246,000	1,628,000	11,930,000	34,534,000
Aug., 1931—											
Production	6,231,000	1,256,000	6,540,000	5,957,000	2,640,000	799,000	6,518,000	1,961,000	1,404,000	5,812,000	39,118,000
Shipments	6,907,000	1,613,000	6,950,000	6,664,000	2,740,000	807,900	6,960,000	2,069,000	1,749,000	7,300,000	43,759,000
Closing stocks.	5,080,000	986,000	4,109,000	2,064,000	849,000	141,000	3,801,000	1,138,000	1,283,000	10,442,000	29,893,000
Sept., 1931—											
Production	6,058,000	1,287,000	6,045,000	5,741,000	2,591,000	853,000	6,594,000	1,674,000	1,298,000	5,296,000	37,437,000
Shipments	6,442,000	1,385,000	6,229,000	5,891,000	2,622,000	859,000	6,894,000	1,697,000	1,408,000	6,719,000	40,146,000
Closing stocks	4,696,000	888,000	3,925,000	1,914,000	818,000	135,000	3,501,000	1,115,000	1,173,000	9,019,000	27,184,000
Ttl. 6 mo.											
Production	35,542,000	7,741,000	36,549,000	34,395,000	14,443,000	4,895,000	37,898,000	11,057,000	7,983,000	33,808,000	224,311,000
Shipments	39,496,000	8,903,000	38,124,000	36,481,000	15,025,000	4,935,000	40,622,000	11,842,000	8,810,000	40,889,000	245,127,000
Closing stocks	4,696,000	888,000	3,925,000	1,914,000	818,000	135,000	3,501,000	1,115,000	1,173,000	9,019,000	27,184,000

*In California they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States, that is, stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto. All gasoline stocks figures in this report are on Bureau of Mines basis and are comparable with the bureau's monthly summaries. In all the refining districts indicated except California, figures in these columns represent gasoline stocks at refineries.

ENGINEERS DISCUSS VAPOR LOCK PROBLEM

(Continued from Page 26)

pane and butane were presented by Doctor Oberfell as follows:

Added component—	(*)
Propane	2.43
Iso-butane	0.73
"Butanes" fraction	0.54
Normal butane	0.50

*Increase in Reid vapor pressure at 100° F. for each volume per cent added.

With the average motor fuel containing about 0.4 per cent of propane and approximately 4 per cent of butane, less than 5 per cent of the fuel is responsible for about one-third of its vapor pressure. Another table presented by Doctor Oberfell shows the estimated volume per cent of "butanes" that could be added to motor fuels if all of the automobiles had fuel feed system designs indicated by Doctor Bridgeman's experiments:

Atmospheric temperature	Max. Reid vapor Pres. average car	Max. Reid vapor Pres. best car	Volume per cent "butanes" added in final blend
100	6.7	11.4	8.7
90	7.9	13.4	10.2
80	9.4	15.9	12.0
70	11.0	18.7	14.1
60	13.0	22.0	16.7

Doctor Oberfell's Conclusions

Improvement in the fuel line arrangement will permit the refiner to use large quantities of butylenes and butanes for better purposes than heating stills and boilers, Doctor Oberfell said, adding that the antiknock ratings of these light hydrocarbons, as determined in the Phillips company's laboratories, are in octane numbers, 91.5 for normal butane, and 100 for iso-butane. While no data are available for butylenes, it is expected their octane numbers would be much higher than the corresponding saturated hydrocarbons. The disadvantages and advantages in adding butanes, respectively, are: Vapor locking tendencies where design of fuel system is the limiting factor, and increased handling losses; improved effective volatility, improved knock rating, and conservation of natural resources.

That the increase in vapor pressure of the average motor fuel in the past 10 years, amounting to about 3 pounds, was not caused by the increased use of natural gasoline was brought out by the following facts presented by Doctor Oberfell, who says this increase has been due primarily to the increased use of cracking processes, to better conservation of vapors present in the crude oil, and to better recovery of volatile constituents from refinery gases. A table showing per cent of natural gasoline to total motor fuel marketed in the United States from 1923 to 1930:

Year	Per cent
1923	10.0
1924	10.0
1925	9.9
1926	10.5
1927	11.51
1928	10.92
1929	11.85
1930	11.72

Much interest was shown in the paper presented by H. D. Newell, of Babcock & Wilcox Tube Co., on "The 18-8 Iron-Chromium-Nickel Alloy with Particular Reference to Its Characteristics for Cracking Coil Service," and the paper presented by A. E. Pew, of Sun Oil Co., on "Corrosion Problems Affecting Oil-Vapor Condensers," in the Thursday sessions of the engineers.

Discussions were presented by the following: F. N. Speller, director of metallurgy and research for National Tube Co.; E. C. Bain, of U. S. Steel Co.; H. L. Duff, of Standard Oil Development Co.; V. B. Brown, of Allegheny Steel Co.; John A. Matthews, of Crucible Steel Co.; and Walter Samans, of Atlantic Refining Co.

This alloy, according to Mr. Newell, has been used very successfully in the past three years as material for seamless cracking coil tubes for severe conditions of corrosion, temperature, and pressure in the refining industry. All of the discussions were highly favorable to the 18-8 iron-chromium-nickel alloy, although its limitations were described by the author as well as the listeners, who agreed that no cracking coil tube material is "foolproof."

ACQUIRES UNION MANAGEMENT

Appalachian Gas Corp. has acquired from Union Utilities, Inc., the outstanding common stock of Union Management & Engineering Corp., operating managers of subsidiaries and affiliated companies in Appalachian Gas Corp. group. Union Management was organized in 1928 to manage both natural and manufactured gas properties. Under its supervision the 210-mile pipe line of Memphis Natural Gas Co. was constructed. Natural gas companies under supervision of Union Management & Engineering Corp. are Ohio Valley Gas Co., Ohio Southern Gas Co., Ohio Kentucky Gas Co., Wayne United Gas Co., Memphis Natural Gas Co., Allegheny Gas Corp., Texas Gas Utilities Co., Commonwealth Gas Corp., and West Virginia Gas Corp., constituting Appalachian Gas Corp. group.

SOUTH PLAINS LINE

AMARILLO, Tex., Apr. 18.—Construction totaling 100 miles is expected during the spring and summer which will bring natural gas service to Spur, Dickens, McAdoo, Roaring Springs and Matador, Tex., from lines of the South Plains Pipe Line Co., headquartered at Lubbock, Tex. West Texas Gas Co., a subsidiary, will distribute the gas.

MONTANA PROJECT

CASPER, Wyo., Apr. 18.—V. E. Luhrsen and associates of Great Falls, Mont., plan construction of a 25-mile line from the Arrow Creek and Pownal districts to Stanford, Mont., where a franchise has been asked. Distribution is also planned in Coffee Creek, Denton, Lewistown and Hanover. A franchise was granted in Denton.

TABLE 2—METHOD OF DETERMINING CRUDE RUNS TO STILLS BY DISTRICTS BASED ON 27,184,000-BARREL GASOLINE STOCK ON OCTOBER 1, 1931

	Total amount gasoline refineries would produce during Apr. 1 - Oct. 1 period.		Estimated amount of natural gasoline that would be blended at refineries during the Apr. 1-Oct. 1 period.		Estimated amount of gasoline that would be produced from crude run to stills during Apr. 1-Oct. 1 period.		Estimated amount of cracked gasoline refineries would produce during the April 1-Oct. 1 period.			Estimated amount of straight-run gasoline refineries would produce during April 1 - Oct. 1 period.			Estimated crude oil that would be run to stills during April 1-Oct. 1 period to produce estimated amount of straightrun and cracked gasoline.	
	Total (1)	Daily (2)	Total (3)	Daily (4)	Total (5)	Daily (6)	Total (7)	Daily (8)	Per cent (9)	Total (10)	Daily (11)	Per cent (12)	Total (13)	Daily (14)
East Coast	35,542,000	194,200	1,000,000	5,400	34,542,000	188,800	17,457,000	95,400	19.01	17,085,000	93,400	18.60	91,884,000	501,000
Appalachian	7,741,000	42,300	290,000	1,600	7,451,000	40,700	2,668,000	14,600	16.00	4,783,000	26,100	28.68	16,677,000	91,200
Indiana, Illinois	36,549,000	199,700	1,400,000	7,600	35,149,000	192,100	16,937,000	92,600	26.84	18,212,000	99,500	28.86	63,104,000	344,800
Oklahoma, Kansas	34,395,000	188,000	2,700,000	14,800	31,695,000	173,200	12,351,000	67,500	20.31	19,344,000	105,700	31.81	60,812,000	332,300
Texas	52,341,000	286,000	6,750,000	36,900	45,591,000	249,100	21,143,000	115,500	19.26	24,448,000	133,600	22.27	109,778,000	599,900
Louisiana, Arkansas	15,952,000	87,200	2,060,000	11,300	13,892,000	75,900	7,423,000	40,600	21.30	6,469,000	35,300	18.56	34,852,000	190,400
Rocky Mt.	7,983,000	43,600	800,000	4,300	7,183,000	39,300	3,609,000	19,700	27.98	3,574,000	19,600	27.71	12,898,000	70,500
California	33,808,000	184,700	6,000,000	32,800	27,808,000	151,900	6,873,000	37,500	8.65	20,935,000	114,400	26.34	79,479,000	434,300
Total United States	224,311,000	1,225,700	21,000,000	114,700	203,311,000	1,111,000	88,461,000	483,400	18.84	114,850,000	627,600	24.45	469,454,000	2,565,300
Texas, Gulf	37,898,000	207,100	5,200,000	28,400	32,698,000	178,700	17,174,000	93,800	21.74	15,524,000	84,900	19.65	79,000,000	431,700
Louisiana, Gulf	11,057,000	60,400	1,230,000	6,700	9,827,000	53,700	5,173,000	28,300	22.94	4,654,000	25,400	20.64	22,549,000	123,200
Total Gulf	48,955,000	267,500	6,430,000	35,100	42,525,000	232,400	22,347,000	122,100	22.00	20,178,000	110,300	19.86	101,549,000	554,900
Inland Texas	14,443,000	78,900	1,550,000	8,500	12,893,000	70,400	3,969,000	21,700	12.90	8,924,000	48,700	29.00	30,778,000	168,200
N. La. and Ark.	4,895,000	26,800	830,000	4,600	4,065,000	22,200	2,250,000	12,300	18.29	1,815,000	9,900	14.75	12,303,000	67,200

COMPARISON OF CURRENT GASOLINE STOCKS FIGURES WITH THOSE SET OUT IN FEDERAL OIL CONSERVATION BOARD AND A.P.I. ECONOMIC COMMITTEE REPORTS

(Figures in barrels of 42 gallons.)

	East Coast (1)	Appalachian (2)	Indiana Illinois Kentucky (3)	Oklahoma Kansas Missouri (4)	—See Note (d)— Texas Gulf Coast (5)	Inland Texas (6)	Louisiana Gulf Coast (7)	N. Louisiana-Arkansas (8)	Rocky Mountain (9)	East of California (10)	California [See Note (f) below] (11)	Total United States (12)
Working stocks required Oct. 1, 1930	4,696,000	888,000	3,925,000	1,914,000	3,501,000	818,000	1,115,000	135,000	1,173,000	18,165,000	9,019,000	27,184,000
Bureau of Mines stocks Oct. 1, 1930	5,425,000	1,168,000	5,462,000	3,086,000	3,757,000	1,981,000	858,000	246,000	1,896,000	23,879,000	14,363,000	38,242,000
Excess or deficiency Oct. 1, 1930	+729,000	+280,000	+1,537,000	+1,172,000	+256,000	+1,163,000	—257,000	+111,000	+723,000	+5,714,000	+5,344,000	+11,058,000
(a) Breakup by districts of A.P.I. Committee stock figure of 40,000,000 bbls. as of April 1, 1931	6,643,000	1,324,000	6,015,000	3,684,000	5,357,000	1,200,000	1,635,000	190,000	1,766,000	27,814,000	12,186,000	40,000,000
A.P.I. estimate of stocks April 1, 1931	8,650,000	2,050,000	5,500,000	4,000,000	6,225,000	1,400,000	1,900,000	175,000	2,000,000	31,900,000	16,100,000	48,000,000
Excess or deficiency by districts, April 1, 1931	+2,007,000	+726,000	—515,000	+316,000	+868,000	+200,000	+265,000	—15,000	+234,000	+4,086,000	+3,914,000	+8,000,000
Bureau of Mines April 1, 1930	9,132,000	2,125,000	8,832,000	5,124,000	6,719,000	1,489,000	2,307,000	354,000	3,168,000	39,250,000	15,978,000	55,228,000
NOVEMBER 1, 1930, STOCKS—												
Actual Bureau of Mines	5,715,000	957,000	4,618,000	2,903,000	4,832,000	1,810,000	820,000	250,000	1,681,000	23,586,000	15,086,000	38,672,000
Federal Conservation Board Report (b)	(Monthly totals indicated in report not broken up by districts)											37,000,000
A.P.I. Economics Committee (c)	4,891,000	1,052,000	4,737,000	2,598,000	4,011,000	1,757,000	965,000	232,000	1,478,000	21,721,000	13,902,000	35,623,000
DECEMBER 1, 1930, STOCKS—												
Actual Bureau of Mines	5,560,000	996,000	4,330,000	2,908,000	4,786,000	1,787,000	965,000	276,000	1,615,000	23,223,000	15,469,000	38,692,000
Federal Conservation Board Report (b)	(Monthly totals indicated in report not broken up by districts)											38,260,000
A.P.I. Economics Committee (c)	4,592,000	980,000	4,339,000	2,448,000	4,336,000	1,707,000	1,167,000	187,000	1,383,000	21,139,000	13,638,000	34,777,000
JANUARY 1, 1931, STOCKS—												
Actual Bureau of Mines	5,773,000	1,195,000	4,288,000	3,370,000	4,917,000	1,812,000	1,413,000	225,000	1,752,000	24,745,000	15,784,000	40,529,000
Federal Conservation Board Report (b)	(Monthly totals indicated in report not broken up by districts)											40,300,000
A.P.I. Economics Committee (c)	4,718,000	1,079,000	4,637,000	2,834,000	4,718,000	1,622,000	1,360,000	206,000	1,529,000	22,703,000	13,051,000	35,754,000
FEBRUARY 1, 1931, STOCKS—												
Actual Bureau of Mines	6,868,000	1,463,000	4,476,000	3,424,000	5,060,000	1,531,000	1,319,000	213,000	1,813,000	26,167,000	16,069,000	42,236,000
Federal Conservation Board Report (b)	(Monthly totals indicated in report not broken up by districts)											43,500,000
A.P.I. Economics Committee (c)	5,491,000	1,248,000	5,587,000	3,456,000	5,525,000	1,611,000	1,494,000	251,000	1,710,000	26,373,000	13,306,000	39,679,000
MARCH 1, 1931, STOCKS—												
Actual Bureau of Mines	7,685,000	1,748,000	4,763,000	3,809,000	4,995,000	1,572,000	1,725,000	209,000	1,940,000	28,446,000	16,267,000	44,713,000
Federal Conservation Board Report (b)	(Monthly totals indicated in report not broken up by districts)											44,666,000
A.P.I. Economics Committee (c)	6,177,000	1,331,000	6,105,000	3,825,000	5,564,000	1,452,000	1,448,000	250,000	1,801,000	27,953,000	12,797,000	40,750,000
APRIL 1, 1931, STOCKS—												
Bureau of Mines (estimated)	8,650,000	2,050,000	5,500,000	4,000,000	6,225,000	1,400,000	1,900,000	175,000	2,000,000	31,900,000	16,100,000	48,000,000
Federal Conservation Board Report (b)	(Monthly totals indicated in report not broken up by districts)											45,000,000
A.P.I. Economics Committee (c)	6,643,000	1,324,000	6,015,000	3,684,000	5,357,000	1,200,000	1,635,000	190,000	1,766,000	27,814,000	12,186,000	40,000,000
BELOW IS A COMPARISON OF THE CHANGE IN STOCKS OF GASOLINE AT REFINERIES BY DISTRICTS DURING THE OCTOBER 1-APRIL 1 PERIODS OF 1929-30 AND 1930-31												
October 1, 1929-April 1, 1930	+5,020,000	+1,059,000	+4,457,000	+2,187,000	+3,599,000	+522,000	+910,000	+67,000	+1,325,000	+19,146,000	+2,926,000	+22,072,000
October 1, 1930-April 1, 1931	+3,225,000	+882,000	+38,000	+914,000	+2,468,000	—581,000	+1,042,000	—71,000	+104,000	+8,021,000	+1,737,000	+9,758,000

(a) The 45,000,000-bbl. figure set out in the Federal Oil Conservation Board's Economic Committee report was not broken up by districts. This is the breakup contained in the A.P.I. Committee Report.
(b) Based upon producing to satisfy current demand plus certain additions to storage ending the period with 45,000,000 bbls.
(c) Based upon producing at a fixed rate over the entire six-month period plus certain additions to October 1, 1930, storage ending the period with possibly 40,000,000 bbls.
(d) To obtain total for Texas refinery district add figures shown under columns 5 and 6.
(e) To obtain total for Louisiana-Arkansas refinery district add figures shown under columns 7 and 8.
(f) In all the refining districts indicated except California, figures in this compilation represent gasoline stocks at refineries. In California they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States, that is, stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto.

Routine Testing of Contact Clays

Complete Neutralization of Acid Oils Can Be Effected Without Use of Caustic. Process Assures Good Color

By E. W. Zublin*

During the past few years, clay treatment by the contact method for the manufacture of lubricating oils has gradually come into prominence. Contact processes, first developed at the Pacific Coast mainly under the guidance of Paul Prutzmann, are now being used successfully in many refineries. The chief advantage of contacting over percolation is the complete neutralizing action on acid oils without the aid of caustic. The action of clay in the contact process is double. It both neutralizes and decolorizes. Decolorization begins to take place only after the oil has been almost completely neutralized. In other words, small quantities of clay will neutralize rather than bleach, and any clay in excess of the minimum required for neutralizing will do the bleaching.

It might appear that acid oils of low acidity would yield better colors than highly acidic oils for the same amount of clay. This however, is not necessarily the case since not only the amount of acid but also its chemical nature comes into play. An acid oil requiring 2 m.g. potassium hydroxide per gram of oil may yield a poorer color under identical contacting condition than one requiring 10 m.g. for neutralization. It is good practice though to keep the acidity of the oil below 15 m.g. potassium hydroxide per gram of oil because excess acidity will eventually raise clay consumption or else result in loss of color.

Different clays have different neutralizing as well as decolorizing capacities. Certain clays from Utah, while not of the highest efficiency for decolorizing, have a very high neutralizing action. Some California clays, on the other hand, are not as powerful for neutralization but have more bleaching capacity.

The choice of the clay to be used at a certain refinery depends upon a combination of several considerations: Characteristics of the stock to be treated, results required from clay (whether it should neutralize or decolorize or do both); efficiency; and price. Another factor, adaptability to recovery, will probably have to be considered in the near future.

The results one can expect from a given clay depend largely on plant design and type of process used. Some plants employ contacting only to neutralize the oil without attempting to make color, and subsequently decolorize by percolation. Other plants employ contacting exclusively to obtain the final color in one or two steps. At given prices, the only other variable affecting economy of contacting, is the clay efficiency, which determines in the final analysis the amount of clay required to produce a certain color. Measuring the efficiency of clay has puzzled investigators for quite a while. The fact that results varied greatly with the slightest departure from a standard procedure and also that results obtained with one oil could not be duplicated with another oil of very similar properties, created considerable difficulty. Further, to make matters worse, freak results are being obtained occasionally that defy any attempt for explanation.

Routine Testing

A routine test of any kind should be fairly rapid, reproducible and easily interpreted in terms of plant language. Early investigators tried to estimate efficiency by such tests as the "Pinene Test." This consisted of mixing pinene (a constituent of turpentine oil) with the clay to be tested under standardized conditions and measuring the rise in temperature caused by polymerization of the pinene on the surface of the clay. While certain relations between the pinene number and decolorizing efficiency exist, they are in no way quantitative. Neither does this test give any indication as to whether the clay is suitable for percolation or contacting; and the temperature of optimum efficiency, which may vary from room temperature to cracking temperatures, is given no consideration.

Attempts were made to decolorize dyed oil solutions, using the degree of decolorization as a measure for efficiency. A number of objections against such a method became evident at once. First it is rather unlikely that the dye or dyes should have the same relative affinity to the clay as acidulous and resinous compounds to be removed from oils. Second, no measure is provided for the neutralizing power of the clay unless strongly acid dyes are employed. Acid dyes usually are insoluble in petroleum oils, except some that form complex compounds with stearic acid. These, however, are extremely unstable, being very easily precipitated by traces of moisture or application of heat. Even if it were possible to find an acid, oil soluble, stable dye, its solution could be used for the comparison with a few oils only, in as much as the relative efficiency of clays varies with the nature of the oils to be treated.

Thus a certain dye solution might furnish a scale comparable to say a certain Mid-Continent acid oil. A slight change in the acid treatment of the same oil might throw the whole comparison out of order. Even the same acid oil after having been stored for a day or two is liable to be decolorized at different rates than indicated by the dye scale, for acid oils are subject to rather rapid changes. Not only does the acidity of acid oils increase upon standing (probably due to de-esterification) but simultaneously a polymerization goes on which is accompanied by a darkening process.

Decolorization of Clays

Interesting observations on the relative decolorization of clays on various substances were made by Neumann and Kober[1]. They found that the bleaching efficiency of contact clays towards pure azo dyes of neutral, acid as well as alkaline reaction is greatest at room temperatures, acid dyes being absorbed most easily; while the natural color of petroleum oils is most efficiently removed at 700° F. and higher. From these and a number of other observations made on vegetable oils, the authors concluded that the total surface of the clay and the chemical nature of the coloring matter are not the only factors accounting for ready adsorption; but that the diameter of the micro-capillaries throughout the clay must be considered also. According to the theory of surface adsorption, the adsorbed film consists of a double layer of molecules. This leads to the conclusion that a clay will reach its maximum efficiency when the average diameter of the micro-capillaries is slightly larger than four times the average diameter of the molecules to be adsorbed.

One method for creating and widening micro-capillaries consists of acid treating and heating the clay. It appears that acid treatment initiates the micro-capillaries by removing acid soluble metal oxides, while heating widens them causing a shrinkage of the skeleton by dehydration. It is almost certain that this is the mechanism of activation. Certain clays, inactive before acid treatment become active after acid treatment towards relatively small molecules at room temperatures and towards larger ones at higher temperatures. This theory also explains why the concentration of acid used for the treatment plays such an important part on the final adsorptive qualities of clays. After removal of the acid soluble magnesium, aluminum and iron oxides (or hydroxides) the remaining skeleton is composed at least partly of silica (SiO_2).

This silica has a tremendous surface due to the removal of the surrounding constituents. Strong acid has a decided peptizing effect on silica that may cause part of it to go in colloidal solution, particularly where the silica exposes such a large surface. The stronger the acid, the more colloidal silica it is capable of holding. This can be demonstrated experimentally by pouring sodium silicate solutions of various strengths into sulphuric or hydrochloric acid of various strengths, and noting the points of turbidity. It becomes evident that too strong an acid will partly destroy the silica skeleton and widen the micro-capillaries beyond their optimum diameter.

While the strength of acid on the side of high concentration is limited by its peptizing action, it is limited on the side of low concentration by the completeness of metal ovide removal. The latter reaction is not of purely ionic nature. The metal oxides are held loosely by the silica and must be separated from it before they can be dissolved in the acid. This separation appears to be a hydrolysis as indicated by the long time required for the reaction, subject to acceleration by rise in temperature and increase in the strength of acid. Experience has taught that for most contact clays one-half of its weight of concentrated sulphuric acid diluted to 15 or 20 per cent strength produces optimum efficiency. The treatment must be carried out at boiling temperature.

Considerable work has been done in the hope of correlating per cent acid soluble metal oxides and efficiency. All these attempts have failed. It is not only the size of the fraction, that can be removed, but also its distribution that contributes to the final efficiency.

Relative Efficiency

In the foregoing discussion reasons were presented that prevent the measurement of clay efficiencies by direct means such as "pinene number," decolorization of dyed oils, etc. The only remaining way for applying a yard stick to this elusive property consists of comparing the decolorizing effects on the same oil of the clay under test to that of a clay which has been arbitrarily designated as standard. The efficiency, or rather the relative efficiency can then be expressed in per cent of the standard as pertaining to the particular type of oil used in the comparative test.

For a standard any clay set aside by mutual agreement of the interested parties can be used. If stored dry, most clays are sufficiently stable to maintain their efficiency over an almost indefinite period. Silica gel has been suggested for standardization work, in order to get away from a standard furnished by an interested party and also to have a universal standard that can be manufactured and duplicated at any time. Unfortunately, available silica gels have very low efficiencies, too low to be used

(Continued on Page 92)

*Texas Pacific Coal & Oil Co.

[1]Zeitschrift fuer angewandte Chemie 1927 —Page 337.

IS COST ACCOUNTING OF ANY REAL VALUE IN OIL FIELD OPERATIONS?

By Francis W. Lake
Union Oil Co. of California*

Before presuming to attempt to answer the title question, it would be well to consider for a few moments the economic changes in the oil industry during the past years. It has been a period of overdevelopment and overproduction, particularly in view of the known market requirements. These increasing competitive conditions have resulted in much lower prices and lower gross revenues than heretofore. The period of large profits from field operations irrespective of the efficiency of those operations is past, and in order to realize even a fair profit at the present time the operating expenses must be reduced to a minimum.

In view of the overdevelopment, the annual budget permitted for field operations must be expended in such a manner that the greatest realization can be obtained. In order to make possible the necessary reduction in development and operating expenses, an accurate system of cost accounting is essential. Detailed and accurate costs are as necessary in field operations at the present time as is the knowledge of field operations themselves. By an understanding analysis of accurate and detailed cost figures both in drilling and producing, many important conclusions can be drawn which will result in lower operating expenses and hence increased returns.

In the first place such an analysis will furnish the information as to how to spend the annual budget in such a way that maximum returns are possible; whether to drill a new well on this property or that, whether to repair old wells rather than drill new ones, whether to put in new and improved methods of production rather than drill more wells or repair old ones for the maintenance of the required production, or whether to change operating methods completely in order to decrease costs. All of these and various similar problems can be solved by a proper analysis of the various cost figures involved.

Proper Cost Analysis

Even after these decisions are made, proper cost analysis will determine expenditures in order to receive the maximum return for the outlay; whether to purchase new equipment and stand a heavier obsolescence and higher cash outlay but lower operating costs or to use more or less obsolete equipment which will have a higher repair and replacement cost during the year and, also, whether to purchase electric motors or steam or gas engines. For example, one type of bit may be much cheaper than another but it may drill slightly less footage per hour or per bit and, without an accurate analysis of the cost per foot, no decision can be reached as to which might be used to the best advantage. In some cases a cheaper, slower drilling bit will prove less expensive during the drilling of the entire well than will a faster bit which costs more.

A close inspection of the operating expenses provides an exceptionally good way to analyze the personnel in the various operations. Some drilling crews are especially efficient for repair work but would not compare at all favorably with another crew on a new well. On the other hand, the other crew might be exceptionally good on drilling wells but not

(Continued on Page 123)

*Before Petroleum Accountants Society, Los Angeles, Calif.

FOR PERFECT PERFORMANCE

Releasing and Circulating Spear

RELEASING AND CIRCULATING SPEAR

Rugged construction, with simple release mechanism, the operation is simple which means a saving in time and expense. The picture and details below give further proof of perfect performance.

SPEAR STEM WITH KEYS
Hollow for fluid circulation.

SHOULDER ON RELEASING NUT

RELEASING NUT
Slides vertically on the Stem and key; box threaded right hand thread to the slip.

SPEAR SLIP
Solid ring at top end; lower portion slotted for expansion of the gripping section.

MANDREL
No lengthwise movement but will rotate on the stem; minimizes friction in the releasing operation of the spear.

DRILL PIPE FLOAT JOINT

Has a large opening in the cage of the valve assembly, thus assuring an easy bypass of fluid by reducing back pressure on the hose, piston rubbers and liner packing. Less steam is needed in getting the fluid to the bottom of the hole. The valve drops far enough to reduce travel wear of slush to the minimum. The assembly is easily milled out, allowing the use of an inside pipe cutter.

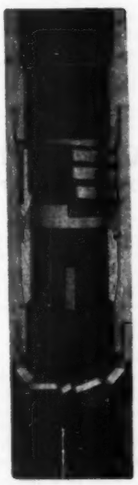
Drill Pipe Float Joint

Forged Steel Wall Hook

RELEASING AND CIRCULATING OVERSHOT

A tool that takes the place of two or three fishing tools. Saves time and trouble. It will catch drill pipe, coupling, or tool joint and releases from any point. The slips, which are keyed in the bowl, have left hand threads and the release is accomplished by rotating to the right. The standard guide is also interchangeable with the Wall Hook and Milling Shoes. These features save many a run in and out of the hole.

When fish is caught the rubber packer makes a tight joint between the overshot and fish, assuring circulation.



Releasing and Circulating Overshot

CASING SUSPENDER AND BLOWOUT PREVENTER

The American Casinghead Suspender and Blowout Preventer is designed and constructed to prevent blowouts between strings of casing and to allow suspension of casing at setting points. Equipped with a special composition packing, prepared to resist salt and sulphur water which is found in many fields.

The body of the suspender is a one-piece bowl which permits tie-down to be made to the four ears without damage to the special packing because of connection necessary as in some of the older types. The Bowl has a male A.P.I. casing connection on top of body which makes it possible to screw on swedge nipple or make any other desired connection.

Casing Suspender and Blowout Preventer

AMERICAN IRON & MACHINE WORKS CO.

OKLAHOMA CITY, U. S. A.

MANUFACTURERS OF OIL FIELD EQUIPMENT

American Releasing and Circulating Overshots
American Rock Bit Wrenches
American Milling Shoes
American Flexible Coupling for Rock Bit Lubricators
American Steel Tool Houses
American Steel Tool Boxes
American Forged Steel Wall Hooks
American Rock Bit Breakout Blocks
American Paraffin Bits
American Forged Steel Drill Collars
American Female Die Nipples
American Releasing and Circulating Spears
American Tapered Taps
American Forged Steel Subs
American Rotary Shoes
American Cone Fishing Baskets
American Steam Lubricators
American Side Tracking Mills
American Combination Reverse and Throttle Levers
American Steel Engine Foundations
American Automatic Cat Head
American Rock Bit Vises
American Rotary Milling Tools
American Myracle Sucker Rod Sockets
American Surface Bit Blades for Rock Bits
American Drill Pipe Float Joints
American Casing Suspender and Blowout Preventer
American Lead Plug
American Rock Bit Cone Fishing Sockets
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American Fish Tail Bits
American Pipe Rackers
American Boltless Hose Clamp
American Shot Packed Barrel
American Cactizona Water Treatment

AMERICAN PRODUCTS SOLD THROUGH LEADING SUPPLY STORES

Plan To Drill 75 Tests in Pennsylvania

T. W. Phillips Gas & Oil Co. Lists Operations in Indiana, Clarion and Clearfield Counties for Spring and Summer

By Staff Correspondent

PITTSBURGH, Pa., Apr. 20.—Among the operations listed for the spring and early summer are some 75 wells to be drilled by the T. W. Phillips Gas & Oil Co. in the Indiana, Clarion and Clearfield County districts. At present this company has some six wells drilling in these counties.

Last year this operator drilled six wells in the valley between Chestnut and Laurel Ridges in eastern Westmoreland County near the Somerset County line and both north and south of the Lincoln Highway. All six of these wells were drilled to a depth of 4,000 feet at which depth they were found dry. The leases of the T. W. Phillips Gas & Oil Co. in this vicinity have been surrendered.

It is interesting to note that the drilling operations of the T. W. Phillips Gas & Oil Co. as planned for the coming year are half of such operations for last year.

SOUTHEAST OHIO

There were seven completions in the Southeastern Ohio Field during the week. Three oil producers with an initial production of 17 bbls., one gas well and three dry holes comprised the seven completions.

In Chatham Township, Medina County, E. R. Edson & Son Co. brought in their No. 13 on the Archie E. Packard farm on Lot 6, Section 13, at 380 feet and in the Cow Run sand. This is a good producer showing for 10 bbls. within the first 24 hours after being shot. In Coshocton County the test of the Preston Oil Co. on the W. A. Little farm in the NE Section 17, Perry Township, came in at 3,128 feet and in the Clinton sand for a 6-bbl. natural producer. This well will be put to pumping without being shot at the present time. The Grass Run Oil & Gas Co. drilled in its second test on the P. R. Devore farm in Carbondale, Section 23, Waterloo Township, Athens County, at 1,075 feet and in grit. It is showing for 1 bbl.

On the Clay Tatten farm in the NW Section 15, Perry Township, Coshocton County, the Preston Oil Co. completed its test at 3,171 feet and in the Clinton sand for a very fair gasser.

An interesting test in an attempt to prove an extension of the Medina County Field is the Ohio Fuel Gas Co.'s test on the A. W. Bowman farm in the NE Section 20, Brunswick Township. This well was completed at 3,160 feet and is dry. The test of the Preston Oil Co. on the C. O. Mercer farm in Section 5, Perry Township, Coshocton County, was dry at 3,185 feet and in the Clinton sand, and the test of Dillon and McFrederick on the M. H. Haynes farm in the SW Section 56, Strongsville Township, Cuyahoga County was likewise at 3,175 feet.

WEST VIRGINIA

On the waters of Still Horse Run in Ten Mile district, Harrison County, J. W. Johnson & Sons completed their test on the J. E. Morris heirs farm for a 5-bbl. producer. The second test of the Chartiers Oil Co. on the Anna Strueber farm in Butler district, Wayne County, was drilled through the Clinton sand to the Berea for a 2-bbl. pumper at 4,410 feet. The second test of the Bowser Oil Co. on the John R. Ralston farm in Dekalb district, Gilmer County, was completed at 1,865 feet in the Maxon sand. It was dry and is being abandoned.

In Calhoun County, Sheridan district, W. W. Dailey and others are drilling their test on the J. A. Maze farm deeper. It is now 1,780 feet and the operators are waiting on a test. On the Jink Miller farm in Jefferson district, Lincoln County, No. 4,312 of the United Fuel Gas Co. is down to 2,358 feet and in the Berea sand, and the second test of the Martin Gas Co. on the Elisha Bias heirs farm in Sheridan district of the same county is down to 1,638 feet and in the Big Lime sand, while No. 9 of the Riverhead Gas Co. on the William R. Nelson heirs farm in Washington district, Boone County, has been drilled down to the 2,300-foot level and in the Berea sand. All three of these wells are waiting on tests.

The Hope Construction & Refining Co. cleaned out and shot its No. 3 on the H. F. Enoch farm on the waters of Sugar Camp Run in Reedy district, Roane County. The production of this well was increased from 8 to 25 bbls. per day by this operation.

Gas Wells

In Tyler County, Ellsworth district, the Manufacturers Light & Heat Co. drilled its No. 3,449 on the C. L. Parks farm down to 2,121 feet for a very fair gasser. The Big Injun sand was found at 2,012 feet and gas was found at 2,014 feet. The United Fuel Gas Co. also got a gasser producing over 500,000 feet when it drilled in its No. 4,277 on the Sunday Creek Coal Co.'s tract in Cabin Creek district, Kanawha County, at 2,443 feet. The Manufacturers Light & Heat Co.'s No. 3,478 on the M. Bartrug farm in Church district, Wetzel County, was completed at 2,960 feet for a very light gasser.

On the waters of Bells Run the test of B. J. Crawley on the Florence Pell farm in Center district, Calhoun County, came in at 2,485 feet as a light gasser in the Berea sand, while the Wayne United Gas Co.'s No. 44 on the A. W. Wilson heirs farm in Lincoln district, Wayne County, was completed at 1,890 feet as a light gasser. The Manufacturers Light & Heat Co. got gas wells in its No. 3,470 on the Dora Doman and others farm in Cameron district, Marshall County, at 1,750 feet, and its No. 2,994 on the P. and I. P. Chambers farm in Liberty district of the same county at 2,724 feet. This last well, No. 2,994, was drilled deeper.

Drilling in West Virginia

In Logan County, Chapmansville district, W. G. McCorkle and others' No. 3 on the J. A. Covert farm is drilling at 1,025 feet, and M. V. Jennings, trustee is spudding in a test in Chapmansville district. The Hope Natural Gas Co. has its No. 7,515 on the Cole and Crane tract in Triadelphia district down to 825 feet, and in Logan district, the West Virginia Gas Corp. has made a location for No. 27 on the Dingus Run Coal Co.'s tract.

The Wayne United Gas Co. has its No. 40 on the A. W. Wilson heirs tract in Lincoln district, Wayne County, shut down at 1,720 feet, and has made a location for No. 49 on the same tract. The Owens-Illinois Glass Co. has made a location on the T. A. Copley farm in Lincoln district and the Chartiers Oil Co. has done likewise on the W. W. Large farm in Butler district. The test of C. C. Wolfe on the Sig. Adkins farm in Union district is drilling at 875 feet.

Tyler County

The Manufacturers Light & Heat Co.'s No. 3,469 on the A. E. Lemasters farm in McElroy district, Tyler County, is shut down at 3,049 feet for orders. The test on the J. T. Phillips farm in Washington district, Jackson County, belonging to the Pine Knot Oil Co. is drilling at the 1,850-foot level. The Owens-Illinois Glass Co. has a rig standing on the Joseph Orth farm in Grant district, Marion County. The 1,500-foot level has been reached on the Ernest Woofter farm in Cove district, Doddridge County, by the Gilco Oil & Gas Co. R. C. Waggoner and others are drilling on the William Living farm in Burning Springs district, Wirt County. This well has been drilled to a depth of 150 feet. There is a rig standing on the John Brown farm in Court House district, Lewis County, for a test by W. C. Johnson.

The Pedlar Run Oil Co. has its test on the Lewis R. Hess farm in Clay district, Monongalia County, shut down at 2,570 feet, and the Philadelphia Gas Co. is drilling its No. 5,402, on the J. Ray Connor farm at 830 feet. The test of the Thompson Harris Co., on the Samuel Hinkel farm in Williamsburg district, Greenbrier County, is drilling at 1,940 feet.

In Gilmer County the following operations are reported: The Hope Natural Gas Co. is rigged up to drill its old well No. 6,251 deeper. This well is on the W. A. Gainer farm in Dekalb district. McCall and others are also rigged up on the W. A. Moore farm, and Frank Golden and others have a rig standing on the H. E. Engle heirs farm, while A. E. Ellis and others have material on the ground on the Harley Gainer farm. Clem Morris and others are fishing for their drilling tools in their test on the W. F. Roberts farm, at 1,530 feet.

SOUTHWEST PENNSYLVANIA

There was but one completion reported from the Southwest Pennsylvania Field and that was the test of the Manufacturers Light & Heat Co. on the G. M. Scott farm in Morris Township, Greene County. This well came in as a very light gasser in the 50-foot sand and at 3,647 feet.

In Wayne Township, Greene County, D. L. Shafer & Co. have their test on the William Jones farm shut down at 850 feet, and the Manufacturers Light & Heat Co. is drilling its No. 3,443 at the 615-foot level on the Felix Bell farm. The Carnegie Natural Gas Co. has a fishing job in its second test on the George Bowers farm in Perry Township at 2,800 feet. There is a rig standing on the J. E. Scott farm in Center Township belonging to J. B. Orndoff. It is for a test well.

Charles Behring & Co. are drilling on the Charles Behring farm in Jefferson Township, Butler County. It has been drilled to 800 feet. The test of the Hoffs Oil Co. on the M. L. Cooper farm in Independence Township, Beaver County, has reached 1,000 feet, while the Lorish Oil Co.'s No. 3, on the C. Lorish farm in Kennedy Township, Allegheny County, is down to 2,250 feet. This well has been shut down.

In Washington County, the test of M. Greene & Co., on the John Craig farm in Donegal Township, is down to 1,150 feet, while No. 703 of the Natural Gas Co. of West Virginia, on the S. A. Post farm in Franklin Township, is down to 2,000 feet. Potts Brothers have a rig standing on the A. Woodruff farm in Chartiers Township.

SAYS RECOVERY CAN COME ONLY THROUGH CO-OPERATIVE EFFORT

NEW YORK, Apr. 20.—"If misery loves company a wealth of affection should bind together the various interests engaged in the petroleum industry," says the April issue of "The Lamp," publication of the Standard Oil Co. (N. J.) "No corporation is too large and no individual operator too small to get its or his proportionate share of the blessings of overproduction, excessive refining capacity and unremunerative prices which represent the fruits of competition unrestrained by common sense.

"The situation is perhaps new and unique in that respect. Heretofore, there have been periods when owners of flush production in the three newer oil producing states, Oklahoma, Texas and California, were revelling in prosperity while the proprietors of old wells in the Pennsylvania region and elsewhere were unable to get more than the barest kind of a living. There have even been times when a few big wells have rewarded producers while 'pumpers' in the same state could not pay out at prevailing levels. There have been occasions when temporary conditions seemed to favor the marketer over the refiner, refiner over the producer, or the owner of tanker tonnage above all.

"Competition, the great leveller, has of late done away with the peaks if not the valleys of the industry's earnings. The long continued overproduction has broken down natural barriers of distance and even isolation. Now we have the same general price depressing effects of too much crude in all countries with oil to sell.

"If no producing area is immune from the blighting effect of oversupply, no more is any group in the industry in a position to enjoy an advantage over any other branch. For the refiner has been led by the prodigal supply of crude, some of it offered below the published price, to draw upon his credit with the banker and investor to provide new equipment. We have seen the consequence in recent months when statistics covering almost all of the industry show that with less than 60 per cent of the refining capacity in operations, we have none the less produced enough gasoline to supply all current demands and to add more rapidly to accumulations than is warranted by the expected needs of the summer of 1931.

"Or see what the marketer has brought upon himself. The original distributor of products for use by the motorist was satisfied to place these through garages, plumbers, hardware stores and other dealer outlets closely or remotely associated with highway transportation. When not enough of these outlets were available to a marketer, he created some of his own by buying or leasing corners and erecting service stations thereon. His competitor did the same thing. When the refiner could not find more jobbers to take his gasoline off his hands, he in some instances became a wholesaler himself and set up marketing machinery. Later on the producer and purchaser of crude who was not satisfied with the volume of buying done by his refiner customers set himself up as a refiner and subsequently as a marketer. Today the chain is complete, and one of the world's largest industries is working for nothing in the hope that Providence will eventually come to the rescue of the oil man and put him back on the road to prosperity.

"The individual operator who is losing money usually figures that the cards are stacked against him and that the big company in the same business is profiting, if not because of his misfortunes at least in spite of them. He thinks that if he handled thousands of barrels of oil instead of hundreds he would make money even at March, 1931, prices. The fact is that he is in the same boat with the biggest operators in the business. They cannot make money while present conditions last, any more than he can. Therefore there is nothing to be gained by aligning one group in the industry against another.

"On the contrary, recovery must come through a correction of present conditions of oversupply, and co-operative effort is required for this correction."

New Field in Southwestern Indiana

Wells Not Large but of Shallow Depth. Three Completions in Central Ohio District. No Illinois Completions

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 20.—In the old Lima Field no new completions were reported for the week. Down in the southern part of Seneca County, near McCutchenville and almost directly south of Tiffin, a well was drilled some time ago by John H. Murphy and Harold Z. Hakes on the Cunningham farm, which showed for a gas volume of 300,000 feet from the Trenton limestone. The well was recognized as one of the good gas wells in that county but it turned to oil and is regarded as a calamity, and drillers are making an effort to shut off the flow of oil and save the gas. The well was connected to the gas line of the Ohio Fuel Gas Co., and when the discovery was made that the well was flowing oil in the line it was cut off until a change can be made for separating the oil.

Word comes from Napoleon, in Henry County, Ohio, to the western edge of the old Lima Field, that the Henry County Oil & Gas Co. will drill six new wells near McClure, same county, the natural gas to be sold to the Ohio Gas Light & Coke Co., and will then be mixed with artificial gas. In order for the local company to furnish the mixture it will be necessary to obtain an amendment to its franchise.

CENTRAL OHIO

In the Central Ohio Field which has been one of the most active areas of the Central West area, there were but three completions reported, one being the Ohio Fuel Gas Co.'s No. 1-5,412 on the E. F. Frick farm, Section 3, Wayne Township, Muskingum County, which was a light gas producer, drilled to a total depth of 4,140 feet. Porter Brothers' No. 10 on the Hocking-Athens Coal Co.'s land, Section 35, York Township, Athens County, showed 2 bbls. at a depth of 3,374 feet along with some gas. This well has not been shot yet and may show an improvement after shooting.

The Lorain Oil & Gas Co. abandoned its location on the George Myers farm, Lot 41, Ridgeville Township, Lorain County. McMillan and others are drilling No. 3 G. and N. Allen farm, Lot 89, Columbia Township, same county.

In Wayne County, Plain Township, Hulse & Kundtz, Cleveland, Ohio, oil operators, drilled a dry hole on the Myers & Horn farm, Section 1, where no sand was found by the drill.

Eagon and others are drilling deeper No. 1 Katherine Selzer farm, Section 7, Green Township, Summitt County, in hopes of finding a deeper pay. At last reports the well had reached a depth of 3,656 feet.

The Wehrle Co. is reported shut down at a depth of 2,945 feet on the Warner-Sundheimer farm, in the second quarter of Bucks Township, Tuscarawas County. Frank Stranges and others made a location for No. 4 on the J. H. Barber farm, Sections 27 and 33, Union Township, Belmont County.

Gallia Development Co.'s second test, on the Sallie Steenberger farm, Section 22, Cheshire Township, Gallia County, got a hole full of water from the Maxon sand from 715-45 feet.

McClay Brothers have a fishing job at 500 feet in their test on the M. W. Fram farm, Section 12, Parkman Township, Geaugas County.

At last reports Harmon & George were down 2,225 feet in No. 2 Effie M. Bates farm, Section 20, Chester Township, Wayne County, and at a depth of 1,875 feet on the Isaac Aby and others land, Section 22, Mifflin Township, Richland County.

Stark County

Stoltz Oil & Gas Co. has rigged up and shut down on the Joseph Halter farm, Section 35, Jackson Township, Stark County. Same company has a rig up on the E. B. Arlanger farm, Section 26, same township. F. A. Brendal and others are drilling four wells in Jackson Township, Stark County. Their No. 2 on the Lake Cable Co.'s property, Section 14, is reported around 2,500 feet; No. 1 Harry Haymaker farm, Section 23, close to 3,000 feet; No. 1 Louis J. Wernet farm, Section 25, spudding, and No. 1 John Stockert farm, Section 26, rigging up. Bettler and others are down around 2,000 feet on the Rudy School House lot, Section 6, Jackson Township, same county.

Eddy and others are shut down at their No. 4 Edward Gardner farm, Section 17, Perry Township, Ashland County. Clifford & Kolb are also shut down at their No. 9 Ira Myers farm, Section 29, same township.

Barnhart and others are reported at 2,675 feet in No. 1 P. A. Grissinger farm, Section 16, Homer Township, Medina County, while Smith and others are around 3,000 feet in No. 1 J. R. Layman farm, Section 19, Green Township, Summitt County. East Ohio Gas Co. is around 2,400 feet in No. 1 C. C. McCue farm, Section 19, same county, and has a rig in for No. 2 on the S. and K. Dewalt farm, Section 25, same township. Same company is about 2,900 feet in No. 1 H. B. Fawcett farm, Section 17, Jackson Township, Stark County; and at about 4,200 feet in No. 2 T. K. Harris farm, Section 34, same township. Same company is below 4,200 feet on the Tam o'Shanter Golf course, Section 26, same township.

Frank O'Mara is down 1,175 feet in No. 11 on the Hocking & Athens Coal Co. land, Section 35, York Township, Athens County.

Medford Oil & Gas Co. dropped into a fairly nice gas well in No. 1 on the John C. Easterday farm, Section 35, Jackson Township, Stark County, at a total depth of 4,275 feet.

INDIANA

The Vanderburg Oil Corp. has evidently found a new oil field in the extreme southwestern part of Indiana, the wells are not large but are of shallow depth compared with some parts of the State. This company has brought in its No. 3 on the George Hornby farm, SE, Section 32, Center Township, Vanderburg County, for an initial of 10 bbls. from a depth of 995 feet. This is the fourth test drilled by this company. The pool is north of Evansville. Two other wells are starting in the same county, one by the Peoples Petroleum Co., on the William Riggs farm, near Darmstadt, and another by the Mount Vernon Co., headed by V. D. Smith, on the Will Hitch farm.

In Pike County, Washington Township, Charles C. Taliaferro, Jr., found a dry hole 800 feet from the north line and 500 feet from the west line of the William Lamb farm, SW, Section 28, at a total depth of 1,223 feet.

Another dry hole was found in Sullivan County by Wade Connelly and others 500 feet from the north line and 350 feet from the west line of the Walters farm, SE NW, Section 29, Haddon Township, at a depth of 825 feet.

Indiana Oil and Gas News

Compiled by Paul F. Simpson, state gas supervisor, division of geology, by counties:

Elkhart County—The Defiance Oil & Gas Co. is starting a test on the Richard C. Lake farm, in Section 10, Jefferson Township.

Floyd County — Albertson and others are drilling on the W. H. Hile lease, 5 miles south of New Albany, on the River Road.

Hamilton County — James McMahan Co. is planning a well on the Alfred Graham land, 5 miles west of Cicero. This will be near the Edwards well completed last fall.

Harrison County — Wyandotte Oil & Gas Co. has started a well on the Day Lemmon farm, in Section 12, Boone Township.

Knox County—The well being drilled by the Gardner Petroleum Co. on the Hall farm in Busseron Township, is reported down 1,150 feet. Several oil shows were encountered.

Monroe County — Petroleum Exploration Co. and Ohio Oil Co. have completed No. 1 H. G. Barrow, in the SE, Section 5, Benton Township, at 676 feet. It gauged 963,000 feet of gas with 225 pounds pressure. Same companies have moved a rig to the Roy Ealy farm, in the northeast quarter of the same section, where another well has been started.

Perry County — Conyers and Bugg completed No. 1 Lee Aders, in Section 19, Clark Township, at 370 feet. The well was stopped in the Barlow sand, although oil was found in the Jackson. A second well is being started on the same farm. Same parties are also starting No. 4 Frank Cassidy, in Section 30, Clark Township.

Porter County—San Juan Coal & Oil Co. is planning to abandon their test in the Arthur Hanrahan farm, 5 miles north of Valparaiso. It penetrated the top of the St. Peter at 1,432 feet.

Pike County—A third well has been started by James E. Young on the Matilda Bilderback farm in Section 23, Washington Township. The Cato Oil & Gas Corp. has started No. 2 Everett Crow, in Section 25, Patoka Township. No. 2 William Lamb has been started by Janes E. Young in Section 28, Washington Township.

Rush County — A gas well is being started by J. D. Overleese for Fred McManus near Carthage, in Ripley Township.

Shelby County—The test well drilled by the W-B Oil Co. on the William McKensen farm in Section 19, Hendricks Township, is shut down after having passed nearly through the Trenton.

Spencer County—No. 1 William Grass was completed by Mellon & Liggett in the Jackson sand, making a good production of oil. Seitz & Medley's No. 1 Phillips was found dry in the Jackson. Steffy and others are drilling No. 1 Gus Sauter. No. 2 Marie Berg, drilled by the Sana Fee Oil Co. in the Troy Pool, was

(Continued on Page 136)

HART COUNTY, KENTUCKY, REPORTS GAS WELL ESTIMATED 5,000,000 FEET

By George A. Whitney
Staff Correspondent Kentucky Fields

HORSE CAVE, Ky., Apr. 20.—Another oil find far above the average has been made in Hart County, along with a volume of gas estimated around 5,000,000 feet. It is owned by Hupp, Duff & Bundy on the W. T. Spencer farm, on the south side of the Green River approximately 5 miles southwest of Munfordville, the county seat, and about three-quarters mile south of the big well drilled on the Bradley farm that created so much excitement a few months ago, and just across the river south of the Logsdon Valley Pool. This well at 325 feet showed a gas volume around 3,000,000 feet, but was drilled to the Corniferous formation which it penetrated but 6 feet at a total depth of 740 feet where it gushed its oil at a rate estimated at 3,000 bbls. Thursday morning it was producing at a rate of 25 bbls. an hour, or 600 bbls. a day. This well makes a nice extension south of the Bradley well and approximately 6 miles northwest of Horse Cave.

Scattered Completions

F. M. and J. M. Meredith's No. 7 on the E. E. Fuqua farm, in the Deanfield Pool of Ohio County, is a 5-bbl. producer from the Jett and Barlow sands at a total depth of 725 feet.

Christian & Schmitt's No. 4 on the Edward Walker farm, 2 miles north of Sebree, in Webster County, is a 5-bbl. pumper.

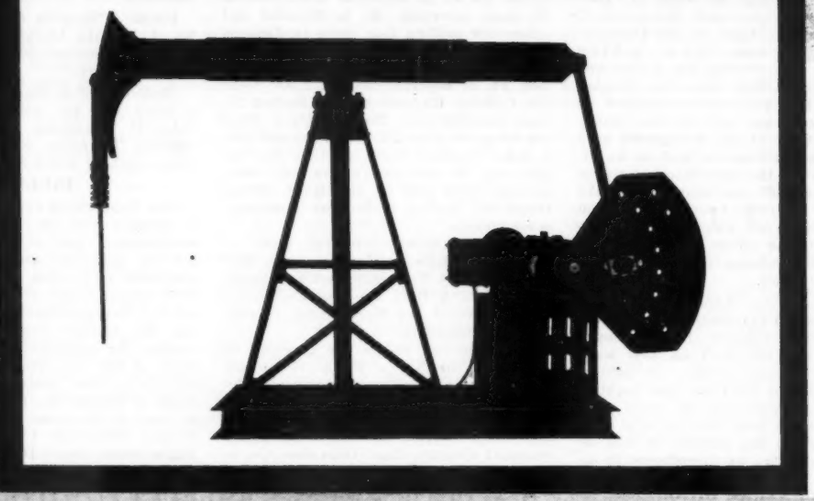
Another dry hole is added to the Greenville Field in Muhlenburg County, in the McCloskey formation at 1,610 feet in No. 1 of the H. & K. Producers Co., on the H. Roe farm, near the hamlet of Weir, southwest of Greenville. In the vicinity of this dry hole the same company recently brought in a 25-bbl. initial producer in No. 2 on the Hugh F. Lee farm, at a shallow depth of 794 feet.

Crude oil is becoming a drug on the market. With all storage tanks nearly full and the market at its lowest ebb, Manager W. F. McCray of the Illinois Pipe Line Co. stated the company was able to dispose of but 2,500 bbls. per day and was receiving 5,800 bbls. This production is about one-third the flush production of the field. With this condition confronting the buyer and transportation companies, a cut of fully one-half the present pumping is urged by them that they may be able to take care of the field as well as possible. There are no new wells being brought in, except at long intervals, but pumpings from old wells have been sufficient up to this time to keep the market of western Kentucky crude and the storage facilities flooded.

Manager McCray stated he had not seen such conditions in the oil industry in his more than 40 years' experience. The demand for fuel oil is the only bright spot on the horizon in the industry, as demand for it has risen to such an extent 19 gravity oil in California is being sold at 60 cents a barrel, while 35 gravity oil has been selling at only 50 cents.

With the starting of great numbers of trucks operating building roads by the states and big national road builders and farmers buying heavily for tractors for early spring work, the demand for gasoline and kerosene should be going up to such an extent the surplus existing since last summer would be cut sharply, but this is not occurring at this time, it is reported, and the surplus continues to grow to the extent of filling all tankage in sight.

NEW UNIT



OP-300 Unit Pumping Powers have "Oilwell" all-steel walking beam, Sampson post, pitman, base and new type rotating counterbalance, adjustable to lead or lag load. Two-piece cover plate holds removable weights in place. Sub-base is cast iron.

ADVANTAGES

INSTALLATION

1. Only one foundation needed.
2. No shelter house required.
3. *Furnished complete with all mechanical parts.
4. Only one electrical connection necessary.
5. Different sizes of driving units interchangeable on same foundation.
3. Fewer shutdowns for servicing.
4. No power wasted by friction and slippage.
5. Length of stroke and speed easily varied at well.
6. Counterbalanced crank adjustable to suit any degree lead or lag.
7. Automatic re-starting after power failure, if desired.

OPERATION

1. Permits pumping at most desirable speeds and length of stroke.
2. Reduces power bills.

MAINTENANCE

1. All moving parts lubricated.
2. All parts accessible.
3. Durable construction throughout.

*Westinghouse-Nuttall drive unit can be used separately on any standard rig, if desired.

DISTRIBUTED BY

OIL WELL SUPPLY COMPANY

(Subsidiary of United States Steel Corporation)

Westinghouse

T 31732

TUNE IN THE WESTINGHOUSE PROGRAM OVER KDKA, KYW, WBZ AND ASSOCIATED N. B. C. STATIONS SUNDAY EVENINGS.

PUMPING POWERS

ANNOUNCING THE OP-300 SERIES

Westinghouse-Nuttall Gears, Motor and Control all in ONE case - *and* . . .

"Oilwell" new adjustable rotating counterbalance, Sampson post, walking beam and base . . .

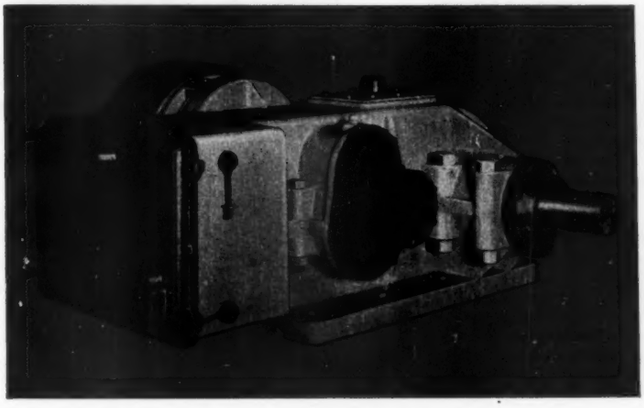
GREATLY reduced oil lifting costs are introduced by this new series of unit pumping powers, the first and only electric pumping equipment having the entire drive—gears, motor and control—combined into one compact, storm-proof case. Advantages in installation, operation and maintenance which make lower pumping costs possible, are listed on the opposite page.

In these new unit pumping powers, Westinghouse-Nuttall and Oil Well Supply Company engineers have embodied the benefits of their broad knowledge of oil field needs gained through long experience in developing, manufacturing and applying oil well pumping equipment.

OP-300 unit pumping powers with their new "Oilwell" adjustable rotating counterbalance, all-steel walking beam, Sampson post and base, are built in three sizes up to 40 horsepower capacity. A wide range in pumping speeds and lengths of stroke are provided by each size.

Cheaper to install, operate, and service than any other equipment designed for pumping only, OP-300 unit pumping powers present the greatest opportunity in a decade to lower the costs of producing crude.

Details and prices can be secured from any Oil Well Supply store or Westinghouse sales office.



Looking at crank side of Westinghouse-Nuttall Gear Unit with built-in motor and control. The small compartment on the side of case gives easy access to "change gears".

Personal Paragraphs About Oil Men

Earl Emery, Bradford, Pa., oil man, and Mrs. Emery, are at Tarpon Springs, Fla., for a short visit.

* * *

Fred Zimmer has returned to Petrolia, Ontario, after completing a three years' contract as a driller in the Venezuelan fields.

* * *

Judge James A. Veasey, vice president and general counsel of the Carter Oil Company, has returned home after spending several weeks in Florida.

* * *

C. E. Lightner, of the General Petroleum Corporation of California recently addressed the Los Angeles Petroleum Accountants Society on refinery operating reports.

* * *

A. M. Butcher was made purchasing agent of Indian Territory Illuminating Oil Company with headquarters in Bartlesville, Okla., succeeding W. L. Muir, resigned.

* * *

L. P. St. Clair and W. B. Robb were re-elected president and secretary-treasurer, respectively, at the annual meeting of the Independent Oil Producers Oil Agency held in Bakersfield, Calif.

* * *

Alex McGaw, who recently returned from Aruba, Dutch West Indies, where he was associated with the Pan American Petroleum & Transit Company refineries, has re-entered the University of Wyoming.

* * *

P. J. Hegwer, district engineer of the United States Geological Survey, located at Casper, Wyo., is spending a few weeks at the Farmington, N. Mex., district office, and will inspect public lands in southeastern Arizona before returning home.

* * *

P. E. Nicholls, manager of the Texas Cities Gas Company, at Galveston, has been elected president of the Galveston Merchants Association. Mr. Nicholls has been with the company 21 years. He was formerly president of the South Central Gas Association, and president of the Southwestern Public Service Association.

* * *

Pierre Bouvier, assistant manager of Omnium International de Petroles, Bucharest, Rumania, is spending a few days visiting refineries in the Mid-Continent region. He spent several weeks on the Pacific Coast and visited a number of refineries there. He will return to Rumania in about a month.

* * *

E. M. Lindsey, formerly superintendent for the Natural Gas Corporation of California, Oregon and Washington, and at one time superintendent of transmission and distribution, construction and operation for the Florida Power Corporation, has been appointed general manager of the Natural Gas Corporation of California, a subsidiary of the Pacific Public Service Company, which in turn is controlled by the Standard Oil Company of California.

* * *

Rene Batigne, of Paris, France, is making a tour of the United States that will take in Chicago, Kansas City, Tulsa and the oil fields of Oklahoma, and will return to New York City by the southern route sailing for France on the S. S. Paris during the early part of May. M. Batigne is a banker and director in several French firms, but is making this trip with Mme. Batigne, for the purpose of securing a first-hand knowledge of conditions in this country.

* * *

H. B. Ward, of H. F. Wilcox Oil & Gas Company, was elected president of the Purchasing Agents Association of Tulsa. He succeeds W. R. Brown, of Mid-Kansas Oil & Gas Company. Other new officers elected were: H. D. Partridge, Indian Territory Illuminating Oil Company; P. W. Fenton, Tidal Oil Company; W. R. Brown, national director; C. A. Prichard, Mid-Continent Petroleum Corporation, alternate national director; H. M. Cosgrove, secretary-treasurer; and E. R. Welch, assistant secretary.

Robert W. Phelps, consulting petroleum engineer, has moved his Venice and Brea offices to Los Angeles, Calif.

* * *

R. A. Broomfield, Jr., has been appointed acting manager of the land and right of way department of the Barnsdall Oil Company of California.

* * *

Charles G. Brown, of the Rio Grande Oil Company recently addressed the Los Angeles Petroleum Accountants Society on "Refinery Runs and Yields."

* * *

Lewis Stevenson, who has been drilling for the Anglo-Persian Oil Company for several years, left Persia on March 6 en route to his home in Petrolia, Ontario.

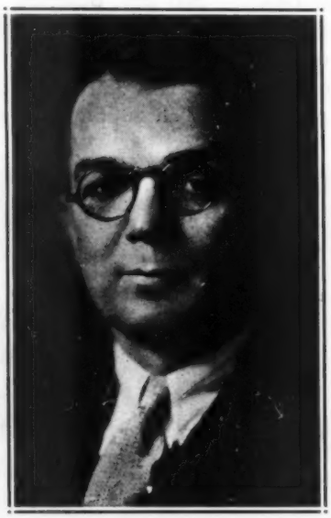
* * *

W. A. Jones, first vice president of the Cities Service Company, who recently spent some time in Los Angeles in connection with the Richfield Oil Company of California and Cities Service deal, left for New York late last week.

* * *

U. de B. Daly, of the Shell Petroleum Corporation, and Dr. Van Holtz Pellekan, head of the geological department, St. Louis, Mo., have been making an inspection trip over the East Texas district where the company has large holdings.

Men of the Industry



A. C. Rubel

A. C. Rubel, who eight years ago entered the employ of the Union Oil Company as a geologist following several years of exploratory work in Mexico, has been promoted to the position of manager of field operations, succeeding F. F. Hill, who was appointed director of production. As assistant manager of field operations and chief geologist, which positions he held the last two years, Mr. Rubel was responsible for developing many of the advanced drilling and production methods used by the Union Oil Company. His rise within the company from the beginning has been rapid. After serving for a few months as a geologist he was transferred to the field department as a petroleum engineer, where his ability was recognized. He was in charge of subsurface work in the Dominguez and Rosecrans Fields when they were discovered by the company. Two years ago he was appointed chief petroleum engineer and last year he was made assistant manager of field operations. He is one of the youngest men to hold the position of manager of field operations in the history of the company.

B. Rixleben, formerly geologist with Minnehoma Oil & Gas Company, has opened a service office in Tulsa.

* * *

L. E. Lockhart, vice president of the Rio Grande Oil Company, Los Angeles, Calif., has been looking over the East Texas fields.

* * *

W. C. Schoenfeld, an independent operator with headquarters in Cleveland, Okla., has recovered from an illness developed while inspecting the East Texas fields.

* * *

R. H. Bartlett, of Tulsa, president of the Union Wire Rope Company, who has been ill of influenza, has recovered sufficiently to enable him to return to his business.

* * *

J. C. Alspaugh, of the development department of the Ingleside refinery of Humble Oil & Refining Company, spent several days at the Baytown refinery doing experimental work.

* * *

William J. Healey, president of the Healey Petroleum Company, Bradford, Pa., and his daughter, Miss Mary, are en route to Rome, Italy, where another daughter is studying sculpturing.

* * *

Mr. and Mrs. Grover Crosbie and daughter have returned to Petrolia, Ontario, from the Colombian fields. Mr. Crosbie, who was working with the Tropical Oil Company, is home on sick leave.

* * *

Ed W. Bateman, discoverer of the Kilgore Field, northern Rusk County, Texas, is host to a group of men who are making a trip to Mexico City. The majority of the party is made up of landowners of the original Bateman block in the pool.

* * *

C. R. Shiers, formerly superintendent of the Enid city plant of the Oklahoma Natural Gas Corporation, has been appointed temporary manager of the Enid district, replacing Charles V. Fetter, who is on an indefinite leave of absence because of ill health.

* * *

C. J. Martin, of Phillips Petroleum Company, was elected vice president of the Petroleum Motor Transportation Association, succeeding C. H. McBirney, of the Mid-Kansas Oil & Gas Company, resigned. A. C. McMillan, of Indian Territory Illuminating Oil Company, was elected second vice president.

* * *

Mr. and Mrs. F. C. Tempest, of Turner Valley, Alberta, will leave shortly for Barranca, Bermeja, Colombia. Mr. Tempest, who has been plant foreman for the Royalite Oil Company for two years, will take a position as refining engineer with the Tropical Oil Company, the Colombian subsidiary of Imperial Oil, Ltd.

* * *

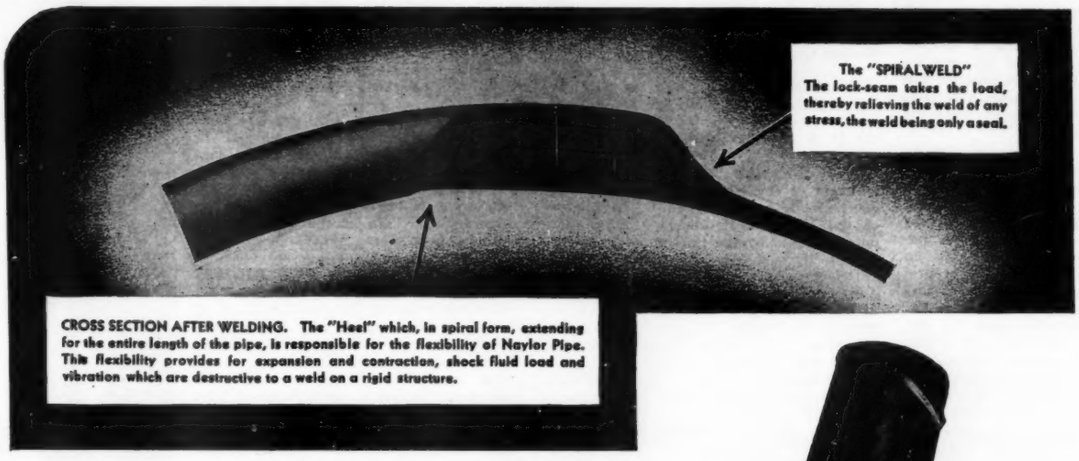
S. Ko, of Okura & Company, New York, and Osamu Kasahara, engineer of the Ogura Oil Company, Ltd., Tokyo-Fu, Japan, have been spending a few days in the Mid-Continent region visiting different refineries. Mr. Kasahara left Japan several months ago and has come through the oil region in Russia and Rumania on his way to the United States. He expects to return to Japan in about a month after spending some time visiting refineries on the Pacific Coast.

* * *

H. L. McQuiston, formerly general superintendent of production for the Independent Oil & Gas Company, has been made superintendent of production for the Phillips Petroleum Company in the State of Kansas with headquarters at Eldorado, Kans. He succeeds R. E. Jolly, who has been transferred by the Phillips Petroleum Company to Burbank, in Osage County, Oklahoma, where he will superintend production operations in the northern part of that State. For the past few months Mr. McQuiston has been directing operations of the Phillips Petroleum Company in southern Oklahoma and along the Gulf Coast.

STRUCTURE.....

what it means in Naylor SPIRALWELD Pipe


The "SPIRALWELD"
The lock-seam takes the load, thereby relieving the weld of any stress, the weld being only a seal.
CROSS SECTION AFTER WELDING. The "Heel" which, in spiral form, extending for the entire length of the pipe, is responsible for the flexibility of Naylor Pipe. This flexibility provides for expansion and contraction, shock fluid load and vibration which are destructive to a weld on a rigid structure.

NAYLOR SPIRALWELD Pipe is made with an electrically welded spiral lock-seam truss. This construction, exclusive with Naylor SPIRALWELD Pipe, provides these definite outstanding structural advantages:

1. MAXIMUM STRUCTURAL STRENGTH
2. MINIMUM WEIGHT 3. FLEXIBILITY

Because of the added strength provided by its lock-seam truss structure, Naylor SPIRALWELD Pipe is being used for the same pressures as standard weight wrought pipe—yet it weighs one half as much. The light weight makes Naylor SPIRALWELD Pipe economical in transporting, handling and installing. It will reduce your total pipe line costs.

The flexibility of the Naylor lock-seam truss structure automatically provides for expansion and contraction throughout each length. Thus, your pipe investment is protected against damage from expansion and contraction caused by temperature changes or ground pull. You economize on expansion joints, too, for none are necessary with Naylor SPIRALWELD Pipe. When the service is within its structural limitations, there is no other pipe made that offers the outstanding advantages of Naylor SPIRALWELD Pipe.

For long life, Naylor SPIRALWELD Pipe is made of Toncan Iron—the corrosion-resisting alloy of iron, copper and molybdenum. This is an additional protection for your pipe line investment!

NAYLOR PIPE COMPANY

Main Office & Plant, 1230 East 92nd Street, CHICAGO

PIPE CARRIED IN STOCK AT CHICAGO, HOUSTON AND LOS ANGELES

SALES OFFICES

NEW YORK, 3116 Chrysler Building
PHILADELPHIA, Witherspoon Building
TULSA, 507 Philtower Building
HOUSTON, 2301 Commerce Street
FT. WORTH: 402 Petroleum Building
LOS ANGELES: Champion & Barber, Inc., 576 Subway Terminal Building., Exclusive Distributors: California, Nevada and Arizona
MONTREAL, CANADA: Mechanical Equipment Company, 660 St. Catherine St., West
VANCOUVER, B. C.: Gordon & Belyea, Ltd., 101 Powell Street
MEXICO: C. H. Elstner, Apartado 284 Monterrey N. L.

Oil Industry Equipment and Supplies

MOTOR'S NOVEL DESIGN PERMITS QUICK REPAIR

In the new Westinghouse W-frame type CS squirrel cage induction motor, the manufacturers have incorporated an important innovation in motor designs, making the different parts of the motor as entirely separate units. Having adopted the separate parts idea, the company has only to keep the number of standardized parts in stock to be able to build, on short notice, a motor for a specific application. One purpose of the new design is to make maintenance simpler and less expensive, because damaged electrical parts can be replaced without replacing or rewinding the motor.

Specialization in machinery and manufacturing processes has brought to the motor manufacturer demands for specialized motors—motors conforming strictly to the rigid requirements of the machines they are to drive. Obviously, it is impossible for a manufacturer to keep on hand for quick delivery even a representative quantity of the types which this demand for specialized motors has created; but, by manufacturing the different motor parts as separate units, stocks of each unit can be maintained, and special motors can be supplied "custom built" to the purchaser's requirements.

A breakdown in the machine or motor driving it interrupts and may seriously delay production. However, if a motor made up of separate parts is damaged, the damaged part can be removed quickly and a new one obtained readily to replace it.

In the new induction motor manufactured by the Westinghouse Electric & Manufacturing Co. the stator core containing its winding is pressed into the motor frame. When it becomes necessary to replace a damaged winding, the old core and its winding are pressed out as a unit by means of an ordinary arbor press, and a new "pre-wound" core pressed in. Then, after the motor is reassembled, it is ready for use, the entire operation of replacing the damaged winding usually having been performed in less than an hour.

BARBER-GREENE CO. CHANGES

Changes in the sales organization for 1931 have been announced by the Barber-Greene Co. of Aurora, Ill., manufacturer of material handling equipment. E. H. Cooper, since 1927 manager of the Barber-Greene Co. of Kansas City, has been appointed ditcher line head for the western division to operate with J. M. Burne, ditcher line head for the eastern division. Mr. Cooper had extensive experience with many types of ditching, particularly with pipe line work in Oklahoma, Kansas, and Missouri. The territory formerly served by Mr. Cooper as manager of the Kansas City office is now divided between the Kenney Machinery Co. of 2301 Grand Avenue, Kansas City, Mo., and the Buda Engine Service of 521 West Archer Street, Tulsa. Two new branch managers are announced by the Barber-Greene Co., Frank Ness in Philadelphia, and D. H. McLean in Cleveland, Ohio.

TRAJECTORY CHART AND DATA

The Link-Belt Co., Chicago, has announced its plan of providing a series of data sheets covering important phases of material handling and power-transmission technical information concerning which little has been published, issuing one a month. Sheet No. 1, "Belt Conveyor Trajectory Chart and Data" is of value to persons using a belt conveyor. It may be obtained on request from the company.

AMONG THE EQUIPMENT HOUSES

The Bush Terminal Co., New York, has ordered seven 55-ton oil-electric locomotives from Ingersoll-Rand Co. for use in switching service.

The Dewey Portland Cement Co. has opened a branch office in the Exchange Bank Building, Tulsa, with Horace E. Brooks in charge.

W. M. Bisett, formerly of the purchasing department of the Pure Oil Co., is now connected with the sales force of the B. & A. Specialty Co., Tulsa.

A. R. Flourney has been made salesmanager of the Universal Rod & Equipment Co., Los Angeles, Calif., distributor of the Universal-Bethlehem sucker rods manufactured by the Bethlehem Steel Co.

Delegates to the annual American Gas Association distributing conference held in Cincinnati, gave a dinner in honor of Merrill N. Davis, Bradford, Pa., vice president of the S. R. Dresser Manufacturing Co., when news of his election to the presidency of the Bradford Board of Commerce reached there.

R. R. Norris, formerly manager of the tractor department for the W-K-M Co., has formed the Tractor Truck Manufacturing Co. in Fort Worth, Tex., which will make attachments for Model U Allis-Chalmers tractors. In addition this company has been appointed Texas distributor for the Silent Hoist Winch & Crane Co. of Brooklyn, N. Y.

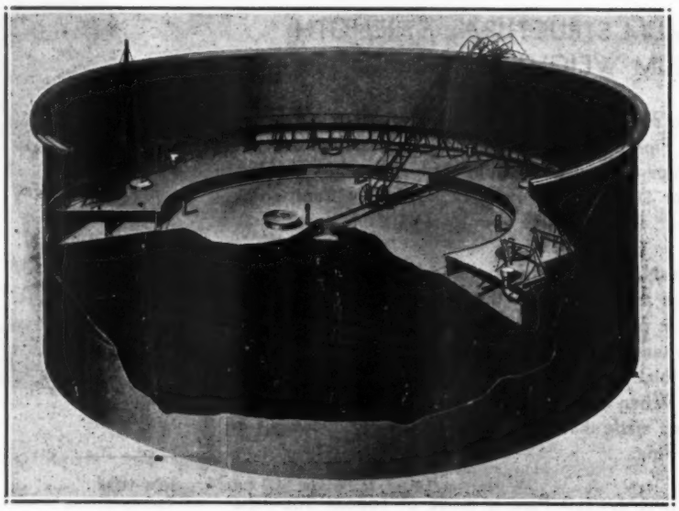
The Link-Belt Co., Chicago, has elected three additional members to the board of directors, thus increasing the board to 12. The new members are: Arthur L. Livermore, George P. Torrence and Richard W. Yerkes.

Stockholders of the Westinghouse Electric & Manufacturing Co. re-elected directors as follows: E. M. Herr, vice chairman, and L. A. Osborne, vice president of the company; H. B. Rust, president of the Koppers Co., and Samuel M. Vauclain, chairman of the board of the Baldwin Locomotive Works.

ACQUIRES PATENTS AND RIGHTS

The Semet-Solvay Engineering Corp. of New York has acquired patents and manufacturing rights relating to the Koller gas producer and the Koller mechanical grate, together with the industrial gas equipment formerly manufactured and sold by the Gas Research Co. and the Smith Gas Engineering Co. of Dayton, Ohio. Both of these lines will be further developed and marketed with the present Semet-Solvay Engineering gas and coke plant and welded equipment.

PONTOON TYPE OF WIGGINS FLOATING ROOF ANNOUNCED



The Chicago Bridge & Iron Works, Chicago, is building a new pontoon type of Wiggins floating roof in addition to the regular standard open-deck type of floating roof which it has been building for several years. The principle of the new design is essentially the same as the open-deck type, except that the pontoon feature has been added.

As shown in the accompanying cutaway illustration, the outer edge of the deck is built in the form of a continuous annular pontoon. This continuous section is divided at regular intervals by bulkheads which form water-tight compartments. The sections, each of which acts as an individual pontoon, make the deck practically nonsinkable.

The principal advantage of the pontoon construction is that it provides insulation for the roof where insulation is most valuable—at the seal which closes the space between the deck and the tank shell. Temperature readings on installations show that the temperature throughout the depth of the seal is relatively uniform and is materially lower at the hottest part of the day than if the insulation were not provided.

The new design uses the standard Wiggins seal, which consists of a ring of shoes that form a long sliding contact with the tank shell. The shoes are joined to the deck with a flexible material which allows the seal to expand or contract, taking care of the irregularities on the inside of the tank shell or any slight "out of roundness" on the tank shell.

The new Wiggins pontoon roof is designed particularly for use on tanks storing light oils at locations which experience high temperatures.

MEN KNOWN *in* THE EQUIPMENT FIELD

G. E. Moreland

G. E. Moreland has become connected with the Byron Jackson Co. in an executive capacity and has established headquarters in the general offices of the company in Los Angeles, Calif. Mr. Moreland was president of the Western Forge Co., which he established as a pioneer in drop forging on the Pacific Coast in 1918.

Mr. Moreland's long experience as a production engineer with Spang, Chalfant Co., Westinghouse Electric & Manufacturing Co., Moreland Truck Co. and the Western Forge Co. has equipped him to undertake production problems for the Byron Jackson Co., which manufactures a great diversity of oil tools.

FOSTER WHEELER TAKES UP MAKING OF BOILERS

The Foster Wheeler Corp. has entered the field of boiler manufacture through acquisition of the plant and business of the D. Connelly Boiler Co. of Cleveland, Ohio, builder of boilers for more than half a century. The Foster Wheeler Corp. has been supplying complete steam generators, and has produced the various parts in its own works, with the exception of the boiler proper.

The units to be produced include forged steel, sectional header cross drum boilers; four-drum and three-drum bent tube boilers; three-drum "low head" bent tube and two-drum bent tube boilers.

With the addition of the boiler to its products the corporation now can undertake single contracts with undivided responsibility as to design, construction and operation for complete steam generators including pulverized fuel equipment, water cooled furnaces, superheaters, economizers and air heaters. Possession of a boiler shop fully equipped for heavy work has the further advantage of enabling Foster Wheeler to meet all of its requirements for heater and evaporator shells as well as for fractionating and stabilizer towers, used extensively in its petroleum refining and gasoline recovery plants.

The 3 POINT REAMER of the MODEL "M" ROCK BIT

insures a round full-gauge hole

THE Model "M" 3-Point Reamer offers many advantages when run on the Model "M" Rock Bit as shown, or on various other types of drilling bits.

ITS use insures a straight, round, full-gauge hole. It can be used singly or in tandem, forming either a 3-point or 6-point reamer; on top of the Model "M" Rock Bit, as a reamer to follow a drag type bit, or to ream a hole already drilled. When used for the latter purpose it insures a well reamed hole before setting pipe.

IT IS common practice in some fields to use one reamer above the bit, and another one above the drill collar to serve as a guide and steady the bit in the hole. Also serves as a guide when used in connection with any type of bit.

CONSTRUCTION of the Model "M" Reamer is such that it gives maximum hole clearance, thereby permitting free circulation of mud. Large clearances between the rollers and body prevent balling-up.

THE rollers are extra long and much larger in diameter than the conventional three-point reamer, and are easily installed. They are supplied with right spiral and left spiral cut teeth which form a cross cutting action on the wall of the hole. This speeds up the cutting action by forming diamond shape cuts, actually removing the formation and not merely pushing it back into the wall.

COMPLETE descriptive information with suggestions for use to insure faster, straighter, full-gauge hole in any kind of formation will be supplied on request.

GLOBE OIL TOOLS CO.

LOS NIETOS, CALIFORNIA.

H. C. Smith Manufacturing Co., Inc.
Ventura, Calif.
Bakersfield, Calif.

Successors to
Wieman-Kammerer-Wright Co., Inc.
Branches:
Taft, Calif.
Hobbs, New Mexico
Kettleman Hills, Calif.

National Tool & Metals, Inc.
Longview, Texas
Oklahoma City, Okla.

Oil Industry Equipment and Supplies

OIL WELL INTRODUCES LIGHTWEIGHT BOILER

The Oil Well Supply Co. has introduced a new lightweight boiler identified as the "Oilwell" Lone Star boiler No. 1,008. This boiler is built for 250 pounds working pressure, and has a rating of 100-105 horsepower. It is compact in design with an overall length of 19 feet 8 inches, a fire box 84 inches long and weighs only 11½ tons, with 2¼-inch tubes providing more efficient heat transfer.

A full open-bottom fire box, with solid steel mud ring, permits the use of larger gas burners, and also provides for over 155 cubic feet of combustion space. The 156 seamless steel tubes are arranged in vertical rows with four washout plugs installed in the back of the tubes at the smokebox end. This facilitates washing the inner tubes from all angles and gives access to tubes that otherwise could not be reached.

The Lone Star boiler is regularly furnished with tubes welded in the fire-box end. A surface blowoff is standard equipment and consists of a copper funnel with the mouth at the water level. Impurities floating on the surface of the water are carried into the mouth of the funnel. A thermic syphon is optional. This feature increases water circulation, giving positive circulation over the crown sheet for perfect protection—provides more heating surface at the hottest part of the boiler.

ELEVEN COMPRESSORS ORDERED

An order for eleven 800-horsepower gas engine compressors, each capable of handling 21,000,000 cubic feet of natural gas daily, has been received by the Cooper-Bessemer Corp. from the Western Gas Co. of El Paso, Tex., a subsidiary of the El Paso Natural Gas Co., according to B. B. Williams, president of the engine company. The total consideration was placed at $375,000. Five of the new engines will be used on a $6,000,000 extension running from El Paso to Douglas and Bisbee, Ariz., and Cananea, Mexico, via Deming, N. Mex. The line will be comprised of a 12-inch welded main good for 925 pounds of working pressure. One battery of three units will be placed on a present line near Fort Bliss, Tex., and another group of like power will be installed north of Sierra Blanca, Tex. On the new line, the engines will be placed at El Paso and Lordsburg, N. Mex., and they will serve natural gas to copper smelters. The whole series of engines, known as twin tandem, double-acting, direct-connected units, are of the same design as the 1,000 and 1,500-horsepower compressors built by Cooper-Bessemer for many natural gas lines in this country, Mr. Williams stated.

OPENS OFFICE IN FORT WORTH

Collins Process, Inc., a Delaware corporation, which is the holding company for the Russell Kerklan Collins petroleum refining and cracking patents in the United States and foreign countries, has announced the opening of its western leasing and technical office at 806½ Taylor Street, Fort Worth, Tex., under the supervision of R. K. Collins. The eastern office is in charge of John Root Church, of Johnson, Church & Co., 149 Broadway, New York. The officers and directors of the company are: Dr. T. C. Terrell, president; John C. Griffith, vice president; Charles M. Butcher, treasurer; Dr. Young J. Mulkey, E. O. Wood and R. K. Collins, directors; all reside in Fort Worth. The company installs and leases special refining and cracking equipment. Special chemical, thermal and mechanical engineering services are offered refiners and producers.

BERG LIVE BOOM IS DESIGNED TO HANDLE LARGER PIPE

Here is shown the new Berg pipe handling live boom and double drum hoist attached to the Caterpillar No. 30 tractor. This boom is designed to handle the larger diameter pipe and longer lengths which of course make heavier loads. The mechanism of the controls is worked out to assure ease and speed of operation with safety of control. This equipment is sold by the Tractor Truck Equipment Co. of Tulsa. A pamphlet describing it may be obtained on request.

ROPER PUMP IS SAID TO REDUCE TRANSFER COSTS

The George D. Roper Corp., Rockford, Ill., has designed and placed on the market a large transfer pump having a capacity of 300 gallons per minute. It is asserted that this pump makes possible a marked reduction in transfer costs, as in unloading tank cars, transferring liquids from storage to truck tanks, etc. The design and construction makes it adaptable to various liquids, such as gasoline, oil, kerosene, fuel oil, naphtha, cotton seed oil, water, etc.

This large-capacity, rotary-gear pump incorporates modern developments in rotary pump design and construction such as the "always primed" feature, positive bearing lubrication, quiet operation, and operation at motor speeds. The rotating elements in the pump are two 30-degree continuous herringbone gears. The stuffing box is packed with three waxed packing rings.

The pump is furnished with either large, hardened and ground journals running in metal bearing bushings, for pumping nonlubricating liquids, or with a double row of ball bearings on ends of both shafts, for pumping lubricating liquids.

PATENT IS GRANTED ON NEW PUMPING ROD JAR

A patent has been awarded to H. H. McFann and R. W. Banks, both of El Dorado, Ark., for the McFann-Banks pumping rod jar, the purpose of which is to prevent fishing and the stripping of tubing. The jar is 4 feet long and made to take 2-inch tubing. Mr. McFann, who has about 56 wells in operation in the El Dorado district, has several of these jars in use. No effort has been made yet to market this oil field specialty, but it is understood steps in this direction are under consideration. Mr. McFann and Mr. Banks are reported to have been working on the development of this device for the last five years.

TODD MADE GENERAL MANAGER

William B. Todd has been appointed general manager of sales of the Jones & Laughlin Steel Corp., Pittsburgh, Pa. He was formerly assistant general manager of sales. In 1922, he resigned a vice presidency in the Union Drawn Steel Co. to join the Jones & Laughlin sales staff as manager of sales of the cold finished division.

NOTES ABOUT TRADE LITERATURE

The Emsco Derrick & Equipment Co., Los Angeles, Calif., is distributing a new bulletin on rotary swivels.

A new and improved cylinder head for types 8, 10 and EC gas engines and a plan for modernizing older models of these engines are the subject of a four-page publicatiton from the Cooper-Bessemer Corp., Mount Vernon, Ohio.

The current issue of the "International Trail," published by the International Harvester Co. of America, Chicago, contains a picture of the new International speed truck recently placed in service by the Phillips Petroleum Co. in San Antonio, Tex. The Phillips fleet now includes more than 50 Internationals.

"The How and Why of the Internal Combustion Engine" is continued in the current number of "Internal Combustion Power," published by the Internal Combustion Power Association, Titusville, Pa.

The Reznor Manufacturing Co., Mercer, Pa., has issued two illustrated folders in colors on Reznor gas-fired warm-air heating appliances for spaces and buildings of every character.

FRACTIONAL HORSEPOWER MOTOR BUILT BY HOWELL

The Howell Electric Motors Co., Howell, Mich., is offering a complete new line of fractional horsepower motors, from one-tenth to one-third horsepower. This line consists of condenser start, split phase and polyphase motors, all built in a frame with the same mechanical dimensions.

The condenser motor has the condenser mounted in a compact box on top of the motor, with all connections made inside the box. The standard condenser box, though mounted on top of the motor, may be mounted on the side of the motor or at any convenient place on the driven appliance, or on the wall. Provision is made on all boxes for wall mounting.

The condenser motors, known as the type CI, are high starting torque constant speed motors having at full voltage, a starting torque of 300 to 400 per cent of full load torque, and a maximum running torque of at least 200 per cent of full load torque. These motors are of squirrel cage construction, without commutator or wire-wound rotor. The split phase motors are built in the same frames as the condenser motors, and are built to conform to both the short-hour and long-hour ratings.

HUMASON PUMP HAS NO BALL AND SEAT VALVE

The Houston Armature Works of Houston, Tex., has placed on the market a new pump which eliminates the ball and seat valve. The pump designed by G. A. Humason, inventor of other pieces of oil field equipment, is reported to have been tried out with satisfactory results in the Pierce Junction Field.

The design of the pump does away with dead space and permits the wiping of sand and shale or any foreign substance which might have a tendency to rub on the side of the cups. Sediment will settle on top of the valve and will not interfere with operation of the pump.

Replacing the ball and seat is a special cage valve, which operates similarly to the ball and seat valve but which is intended to eliminate wear. On the bottom is a special cup the same as used on the traveling valve only smaller in diameter, this being the medium for forcing the oil into the valve.

ARMITE INTRODUCES NEW HARD-FACING MATERIALS

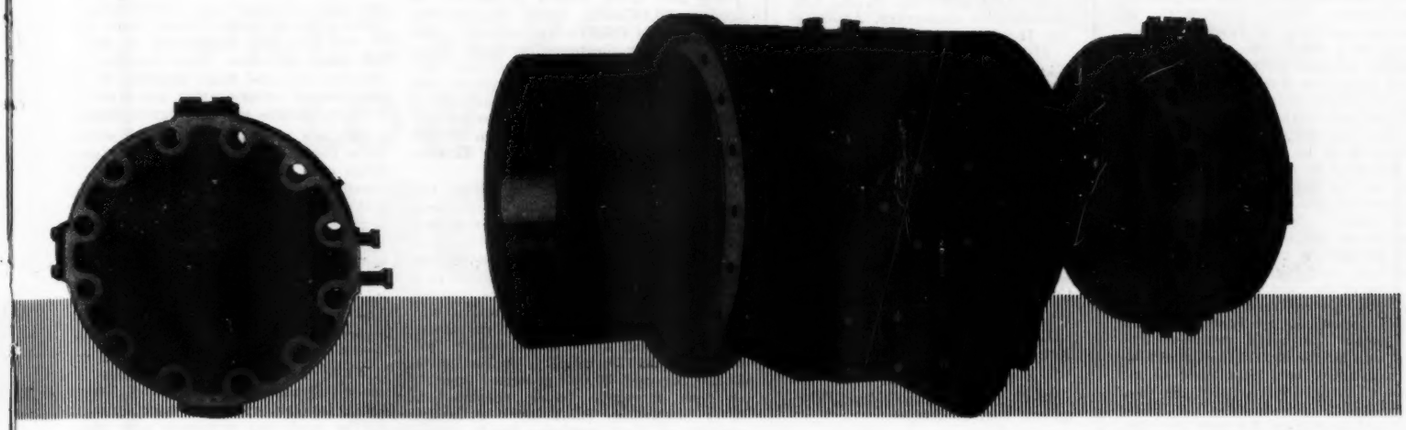
Introduction of a new group of hard-facing materials is announced by Armite Laboratories. These products cover the entire field of hard-facing applications, according to the manufacturers, and consist of compounds, inserts and hard-facing rods.

One of the products is Armite Arcweld, a tungsten carbide compound in black granular form, applied with an electric arc using a negative carbon electrode. The company also produces this material in tube form, said to be the first time tube stock has ever been introduced in this kind of hard-facing.

The laboratory also makes diamond-like inserts and compound ranging from as small as 20-mesh to one-half-inch diameter. A hard-facing rod manufactured by the laboratory is of unusually light weight, permitting coverage of more surface for each pound of material. This hard-facing rod is made in three consistencies of hardness and has a melting point of 2,300° F. A catalog listing the several Armite products may be procured by addressing the manufacturers, Armite Laboratories, 318 West Ninth Street, Los Angeles, Calif.

R EARLIER MODELS

oper-Bessemer



R TYPES-8, 10 & EC GAS ENGINES

STEEL CYLINDER HEAD

The new replacement head is a one-piece, alloy-steel casting, so designed that all initial casting strains are avoided. Service records show that it withstands extreme temperature changes without cracking. Cooling is more thorough, and joint leakage is eliminated. Large, removable plate covers entire front.

NEW POWER CYLINDER

The new replacement cylinder has wider exhaust bridges with positive cooling water-circulation. It has increased inlet and exhaust port capacity, better scavenging, better lubrication of exhaust bridges as well as the entire cylinder, and ground finish on the cylinder bore.

IMPROVED GAS ECONOMIZER

The new improved design gas economizer increases power and decreases fuel consumption. Fuel savings effected by including this device, when modernizing engines, will give fuel economy approaching that of 4-cycle units. Parts are made of special long-lasting materials. Oil cups provide thorough lubrication.

MOUNT VERNON, OHIO
201 E. First Street
Tulsa, Oklahoma

1313 Magnolia Building
Dallas, Texas

GROVE CITY, PENNSYLVANIA
640 E. 61st St.
Los Angeles, California

Suite No. 301, 25 W. 43rd St.
New York, N. Y.

Natural Gas Industry Developments

NEW AMARILLO BIDS TO BE OPENED APRIL 28

AMARILLO, Tex., Apr. 20.—Notice authorized by the city commission calls for gas distribution bids on a cash basis, to be opened April 28. Under the terms of a contract which became known following a special session of the commission, the city now has more than $1,500,000 available to pay for the project.

The contract, which is with G. M. Dunne and associates of Wichita, Kans., provides for a bond issue not to exceed $1,600,000 bearing interest at the rate of 6 per cent from April 15. The bonds will be secured by mortgage on the city's gas system and neither principal nor interest can ever be paid by a tax levy. The issue is to be redeemed within 10 years, but may be extended to 15 years. Holders of the bonds will be protected on payment of principal and interest by deed of trust.

G. M. Dunne and associates have agreed to post $10,000 in cash as evidence of good faith in carrying out the contract.

"In view of the fact that the city has entered into this contract it will not be in order to open bids received tonight so the proposals are being returned unopened," said Mayor Ernest O. Thompson.

The new notice sets September 15 as the date of completion for the gas distribution system and a forfeit of $100 a day would be exacted for each day the system is not completed after that date. Certified check for 5 per cent of the total amount must accompany each bid.

MT. PLEASANT GAS FRANCHISE

MUSKEGON, Mich., Apr. 18.—A majority of the Mount Pleasant city commissioners are said to favor the proposed franchise which would bring natural gas from Vernon Township and Clare County gas wells to consumers of the city through the National Public Utilities Co. A draft of the proposed franchise has been sent to company officials at Chicago for their approval before it is passed upon by the city commission and the people of Mount Pleasant. The company is prepared to cut natural gas into the lines about July 1 if the franchise is approved. A reduction of about 50 per cent in gas costs is expected to result.

ACCOUNTING CONFERENCE

In the final program of the accounting section conference, A.G.A., April 23-24 at the Hotel Stevens, Chicago, Ill., attention is particularly called to the roundtable luncheon discussions at 12:30 p.m., Thursday, April 23. Among the papers to be read at the conference are: "Some Recent Trends in Gas Rate Structures," by Paul Ryan, statistician, A.G.A.; "The Therm Basis of Billing," by Frank L. Griffith, Peoples Gas Light & Coke Co., Chicago, Ill.; "Telling the Customer the Story of 'Change-Over' to Natural Gas," by Paul Renshaw, Memphis Power & Light Co., Memphis, Tenn.; "Initial and Other Customer Contacts," by B. S. Watson, H. L. Doherty & Co., New York, N. Y.

TO SERVE CRAIG, COLO.

The Wyocolo Utility Corp. has asked for a franchise for the service of natural gas in Craig, Colo., supply to come from wells near the city.

ELY, NEV., FRANCHISE

Mammoth Gas Co. has asked that the franchise recently applied for in Ely, Nev., be transferred to the Nevada Gas Co., a subsidiary.

GAS CALENDAR

APRIL

23-24—Chicago, Ill., A.G.A. Accounting conference, Stevens Hotel.

28-30—Wernersville, Pa., Pennsylvania Gas Association, Galen Hall.

MAY

1-2—Atlantic City, N. J., A.G.A. executive conference, Ambassador Hotel.

11-14—Memphis, Tenn.. A.G.A. Natural Gasoline Department, Peabody Hotel.

JUNE

4-5—Montreal, Quebec, Canadian Gas Association.

9-11 — Chattanooga, Tenn., Southern Gas Association.

15-20—Cleveland, Ohio, A.G.A. domestic appliance course, Testing Laboratory.

SEPTEMBER

San Francisco, Calif., Pacific Coast Gas Association.

OCTOBER

12-16 — Atlantic City, N. J., American Gas Association.

NOVEMBER

16-21 — Pittsburgh, Pa., Bituminous coal conference.

ALBERTA REGULATIONS ARE BEING DRAFTED

CHATHAM, Ontario, Apr. 18.—With the arrival in Edmonton of William Calder, newly appointed head of the petroleum and natural gas branch of the Alberta department of lands and mines, work has been commenced on the actual drafting of the new regulations to govern petroleum and natural gas development and production in Alberta. Except for the new clauses designed to conserve natural gas, the regulations will not be materially different from those in force under the Dominion government and which have continued since the province of Alberta took over its natural resources on October 1, 1930.

The new regulations will, however, apply to all petroleum and natural gas properties in the province including federal leases, C.P.R. and other lands, freehold rights and provincial leases. New regulations were authorized by an act passed by the Alberta legislature a few weeks ago.

The only important changes are those curtailing the gas production in Turner Valley to 40 per cent of the open flow, which will correspondingly reduce the crude naphtha recovery from wells in the deep lime. Partial proration has already been introduced to some extent by some of the major producing companies. The new regulations will also restrict to some extent the drilling of offset wells.

PRICHETT, COLO., FRANCHISE

Colorado Gas & Utilities Co., Denver, has been granted a natural gas franchise in Prichett, Colo. Supply will come from the recently completed line from Hugoton, Kans., gas area to Lamar and other cities in eastern Colorado and western Kansas.

PHILADELPHIA REFUSED CUT

PHILADELPHIA, Pa., Apr. 18.—The Philadelphia Gas Commission has overruled a petition for a rate of 87 cents per 1,000 feet of gas and reported to the city council that its original rate of 95 cents for 1931 will stand.

OKLAHOMA NATURAL GAS MAKES ANNUAL REPORT

In its annual report for the year ended December 31, 1930, Oklahoma Natural Gas Corp. shows gross revenues, including other income, of $10,429,915, as compared with $11,098,731 for 1929. Gas purchases, operating expenses, maintenance, general and administrative expense and taxes totaled $5,944,784, as against $6,185,582. Gross corporate income was $4,485,131, as compared with $4,913,149 for the preceding year. After deducting interest on funded and unfunded debt, funded debt expense and miscellaneous charges there remained a balance of $2,788,903. After reserves for retirements of properties the sum carried to earned surplus account was $2,009,973.

The report shows that interest on the corporation's first mortgage bonds was earned 3.19 times during 1930 before provision for depreciation and depletion, and 2.64 times after depreciation and depletion. Dividends on the cumulative preferred stock outstanding were earned 2.88 times after depreciation and depletion. Fixed assets of the corporation, after deducting depreciation reserve, totaled $57,098,979, which is equivalent to $2,220 for each $1,000 principal amount of first mortgage bonds outstanding. After deducting $25,714,900 principal amount of first mortgage bonds, there remained $31,384,079 of fixed assets equivalent to $296 per share for the 106,012 shares of cumulative preferred stock outstanding.

CONTROL OF CARBONS CONS.

Upon completion of present plans Appalachian Gas Corp. will own the common stock of Monroe Consolidated Gas Co., which, through majority ownership in Carbons Consolidated, Inc., will own and operate natural gas properties in the Monroe gas field of Louisiana. These properties are now selling natural gas to United Carbon Co. under a long term contract providing for minimum sales of an average of 40,000,000 feet per day, of which 20,000,000 feet is designated for resale to Interstate Natural Gas Co., affiliated with Standard Oil Co. of New Jersey and Columbian Carbon Co. Properties include 26 producing wells having a combined daily open flow capacity of approximately 332,302,000 feet and reserves estimated at about 128,687,425,000 feet of natural gas.

PENNSYLVANIA GAS ASSOCIATION

Plans for the annual Pennsylvania Gas Association convention to be held at Galen Hall, Wernersville, Pa., on April 28, 29 and 30 are about completed, according to Edward G. Boyer, president of the association.

Among the papers to be delivered will be the following on Wednesday morning: "Production and Distribution of Butane Gas," by Charles M. Sturkey, southern division manager, National Public Utilities Corp., Lexington, N. C.; "Gas Compression," by F. L. Lucker, Ingersoll-Rand Co., New York City; and "Metering High Pressure Gas," by Arthur Benson, Metric Metal Works, Erie, Pa.

ARKANSAS REDUCTIONS

Arkansas Western Gas Co., subsidiary of Southern Union Gas Co., of Dallas, Tex., has announced a 10 per cent reduction in gas rates throughout its system. The company maintains headquarters at Fayetteville, Ark., serving in addition, Bentonville, Gentry, Siloam Springs, Rogers and Springdale.

NEW LIGNITE PROCESS REPORTED IN GERMANY

After many years of research and experimenting, the problem of making gas from lignite on a commercial basis has been solved, it is announced by the Lignite Gas Co., of Kassel, Germany, says the New York Times.

The new process developed by the company in municipal gas plants promises to be of the highest economic value, since it will free gas production in eastern Germany provinces from western and Silesian coal and make possible the construction of cross country gas pipe lines from the middle German lignite deposits.

The new gas already has been successfully tested by distributing large quantities over the Kassel gas system. The consumers were unaware of any change and did not notice any difference.

The remarkable efficiency of the new process is shown by the fact that the gas yield from lignite is from 50 to 200 per cent greater than from coal. Moreover, the cost of heat needed for the conversion of lignite into gas is said to be covered by the value of the remaining lignite coke.

While the details of the process are not yet divulged, it was learned that the plants for gas production from coal cannot be used, but expensive new plants are necessary. These expenses, however, are negligible, particularly in countries where there is no coal but plenty of lignite, notably Yugoslavia and Italy.

ARKANSAS NATURAL GAS

Arkansas Natural Gas Corp. reports gross earnings for the 12 months ended December 31, 1930, amounted to $11,103,500, compared with $9,790,831 for the corresponding period a year ago. Net earnings increased from $4,697,650 to $4,936,361 over the same period.

Net to common stocks and reserves for the 12 months ended December 31, 1930, was $3,917,896, as compared with $2,332,370 for the 12 months ended December 31, 1929.

The consolidated balance sheet for 1930 shows total assets of $92,559,116 and earned surplus of $6,534,825. Continuing its expansion program started early in 1929, Arkansas Natural Gas Corp. during 1930 acquired a controlling interest in Louisiana Oil Refining Corp. This acquisition added more than 4,000 retail outlets, together with two modern refineries, which provide distribution of petroleum products in Arkansas, Oklahoma, Louisiana, Mississippi, Tennessee and Texas.

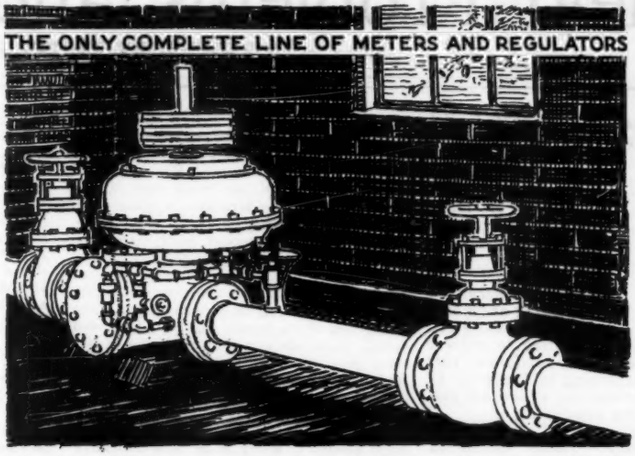
BUYS LAKE CHARLES SYSTEM

Agreement to purchase the Lake Charles, La., gas plant and city distribution system from the Gulf States Utilities Co. was announced by the United Gas Public Service Co., a unit of the United Gas system.

Purchase of the Lake Charles system will make that city headquarters of the division to be served by the new pipe line under construction in Southwest Louisiana. D. S. McManus, division manager, has temporary headquarters in Lake Charles. The Lake Charles system will be taken over when natural gas is available for distribution about July 1.

TO SUPPLY ILLINOIS TOWNS

Distribution systems are under construction, preparatory to supplying the towns of Neoga and Sigel, Ill., with natural gas from the mains of the Panhandle-Eastern Pipe Line Co.'s main carrier.



WHEN THE PRESSURE IS LOW -EMCO BOOSTERS

Installation of EMCO Boosters eliminates the expense of having to increase the pressure at district regulator stations by hand during peak hours.

The EMCO Pressure Booster consists of a venturi section attached to the outlet side of the regulator. By making velocity changes through the venturi throat in combination with a Pitot tube—effective on the regulator diaphragm, the ratio of pressure and volume are automatically controlled.

EMCO PRINCIPLES

Removable Valve Box · One Piece Body Casting
Interchangeable Diaphragm Heads
Long Sensitive Diaphragm Stroke
Relatively Short Valve Stroke

EMCO METERS AND REGULATORS

PITTSBURGH EQUITABLE METER COMPANY

Main Office and Works—Pittsburgh, Pa.

New York City · Chicago, Ill. · Tulsa, Okla. · Dallas, Texas · Columbia, S. C. · Salt Lake City · Seattle, Wash. · Houston, Texas · Los Angeles, Calif. · Davenport, Iowa · Kansas City, Mo.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

HOOKUP FOR VAN FIELD WELL

We drilled in a well yesterday in the Van Field, through 2½-inch tubing, and flowed it through a 3-inch flow line to the stock tanks about 250 feet away. The top of the stock tank into which we flowed it is some 30 feet higher than the MacClatchie flow bean through which it was produced.

After blowing or flowing the well through the tubing and then the casing in order to allow it to clean itself, it was turned into the 3-inch flow line with the pressure gauge on top of the tubing showing 100 pounds. The proration test was three hours, at the end of which time the pressure had built up to 250 pounds, and the choke was eleven-sixteenths.

Would the 3-inch flow line under these conditions allow the well to flow as much as it would under the same conditions through 4-inch flow line? The well has quite a lot of gas and while flowing through the casing into the circulating pit to clean itself it made as nice a show and showed for as much volume and production as two other wells on the same lease, one of which made 100 bbls. per hour, the other 82 bbls. per hour, while this well only made 69 bbls. per hour.

The well that made 100 bbls. per hour flowed through 4-inch flow line without a gas separator. The one that made 82 bbls. per hour flowed into the gas separator at the derrick through 3-inch, but had to gravity some 400 feet through a 4-inch flow line to the tanks. The well we brought in yesterday flowed directly into the stock tank without any separator. —F. E. J.

This department has been unable to obtain an aswer to your question about the relative capacities of the well if flowed through 3-inch or 4-inch tubing, but it is believed that placing the stock tank 30 feet higher than the flow bean placed substantial back pressure on the well and may have had its effect upon the amount of oil produced.

Experiences in Seminole area with gas lift wells proved very conclusively that the pipe line between well head and separator or flow tank should have the least possible number of elbows in the line. Shirley's article shows this principle quite clearly and we think that if you will give it consideration in connection with your problem you will find something that may answer your questions.

The problem as to the relative merits of 3 and 4-inch pipe is so involved that it is difficult without very complete data to make any analysis of what might have happened if the larger size pipe had been used. It is obvious that with the larger size pipe the friction would have been reduced, but slippage might have been increased and oil that had been carried to the top of the tubing might have fallen back into the well again because the energy needed to carry it on into the tanks was lost due to the gas breaking through the oil and by-passing it.

This is known to have happened in wells produced by gas lift and we think if you will study the literature on gas lift practice you will get some good data to apply to your problem.

Copies of several articles that have appeared in The Oil and Gas Journal are being sent to you, and your attention is directed especially to the one by Charles L. Shirley, "Some Uses of Oil and Gas Separators," in which you will find formulas that may be of help to you in connection with your problem.

HANDLING THE GUSHER

Please give me some information on gas and oil wells. What do they do to prepare a well in case they should strike a gusher? Also, how do they harness one that has run wild, like the Meeker well? I have an idea, and I want this information to see if it is not a valuable one. I believe my idea is all right if they do not have it yet.—F. W. F.

The details of drilling operations in high pressure pools are involved and rather difficult to explain in the space available here and The Oil and Gas Journal has carried numerous articles dealing with this subject.

Briefly when the well is being drilled with rotary equipment the hole as drilled is kept full of heavy mud and the weight of this column of mud at the bottom of the hole is enough to hold back any gas or oil in the formation penetrated by the drill.

This permits the driller to "make hole" regardless of the underground conditions and as the various formations are penetrated gas, oil or water sands may be sealed off and give no trouble so far as drilling the well is concerned. When the main producing zone is reached the driller stops drilling, and the drill stem and bit are pulled out of the hole.

The mud in the hole is allowed to remain there until the casing at the top of the well is equipped with a number of high pressure fittings and valves and after this has been done the mud is removed either by bailing or "washing" until the weight of the column of mud is less than the bottom hole pressure in the well and the gas and oil then will break through and begin to flow to the top of the casing where it is controlled by the valves mentioned.

The Meeker well was first killed by what is known as the Halliburton method, described in detail in The Oil and Gas Journal issues of January 29 and February 5, 1931. When the well was under control the valves and fittings required were put in place at the head of the casing.

You would be interested in "Deep Well Drilling," published by W. H. Jeffery, Second National Bank Building, Toledo, Ohio, which gives full details of oil well drilling operations.

UTILIZING A NUISANCE

The thought has occurred to me that since sulphur has commercial uses it might be possible for the chemist to find some way of turning to account the hydrogen sulphide which I understand is present in some of the natural gas produced in this country, especially in Texas. Is this a fool idea? Does this hydrogen sulphide occur very generally in natural gas that comes from oil wells?—E. O. D.

No, this is not a fool idea. In fact, the use of finely precipitated sulphur from hydrogen sulphide gas as a medicament in soap has been developed experimentally at the Ohio State University in Columbus, Ohio, and found beneficial. Large quantities of hydrogen sulphide occur in the natural gas produced in the West Texas fields and concentrations as high as 15 per cent are found in the Crane-Upton Field in that State. This gas is also present in California fields and to a smaller degree in practically every oil and gas producing state.

The gas is now considered decidedly detrimental due to its corrosive action on the equipment and must be removed from the residue gases if they are to be used for fuel. This has prompted research work intended to lead to the economic removal of this gas and in some of these suggested processes, the hydrogen sulphide enters into a chemical reaction which liberates the sulphur as a very fine precipitate. If this can be economically recovered it may become a revenue producer. The soap containing the free sulphur is said to cure some of the minor skin diseases and to add to the cleansing power of the soap.

WHY WAS IT CALLED THAT?

KNUCKLE JOINT

A knuckle joint is a joint or coupling forming a connection between two parts of a mechanism in which a projection on one is inserted into a corresponding recess in the other, as when the fingers are closed and a knuckle of one hand is thrust between two knuckles of the other. Use of the term has been extended to other joints, such as universal joints.

CONCRETE FOR TANK BOTTOM

A valuable contribution to the discussion concerning construction of a concrete bottom for an old steel tank is the appended letter from J. F. Hough, assistant manager of the structural and technical bureau of the Portland Cement Association. The advice given to E. L. J. by this department in The Oil and Gas Journal of March 26 was obtained from authoritative sources and is believed to be trustworthy. This does not detract from the usefulness of the opinion offered by Mr. Hough, who is recognized as an authority of high standing in this field. He says:

"I read with considerable interest the page in your publication dealing with 'Field Problems and Their Solution.' It is hoped that you will not consider me out of turn in taking exception to the discussion in your March 26 edition dealing with a concrete bottom for an old steel tank.

"It is recommended in this column that a concrete bottom 4 inches thick be placed inside the tank and the contraction crack around the inside perimeter be filled with a thick asphalt. It is further recommended that the concrete be made with a small percentage of sand and no coarse aggregate.

"Such a mixture would not be concrete, but mortar, and would have little or no value as a tank bottom when placed directly on earth. Without considerable reinforcement it would undoubtedly craze. Shrinkage cracks would be numerous due to the richness of the mixture. Such a slab would have no structural value and would probably go to pieces the first time the tank was filled. In addition, the mortar would be very costly in comparison with a concrete bottom due to the relatively large amount of cement required. The value of filling the contraction crack around the inside perimeter with asphalt is also questioned. Asphalt, being soluble in petroleum, would soon be dissolved by the oil stored in the tank.

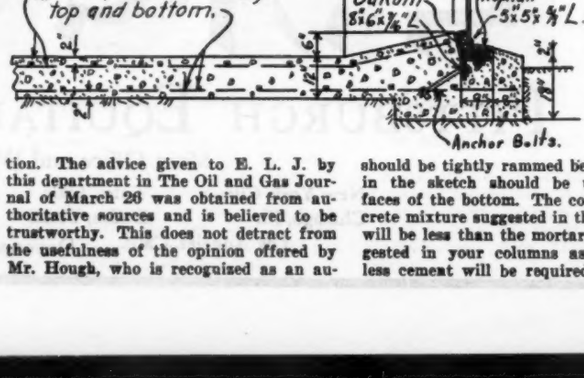
"I am enclosing a sketch showing a suggested method of placing a steel tank on a concrete bottom. The concrete should be placed on a well compacted and drained earth foundation. It should be of a designed mixture made with not more than 6 gallons of water per sack of cement, which amount of water includes the moisture contained in the aggregate. The mix should be workable and plastic. As trial proportions, the following are suggested. It may be necessary to modify these proportions slightly to attain workability, which should be done by changing the amounts of coarse aggregate. The specified amount of water (6 gallons per sack of cement) should be held constant.

	Maximum size of aggregate	
	1 inch	2 inches
Trial mix	1-2¼-3¼	1-2¼-4

"These mixes should give a 1-inch slump.

"The 8"x6"x$\frac{7}{16}$" angle shown in the sketch should be held in proper alignment while the concrete is placed. Anchor bolts should be provided in the 6-inch flange extending into the concrete. The 8-inch flange should be equipped with bolts for fastening the base angle of the steel tank in place after the concrete has hardened. A gasket that will not be affected by petroleum should be used between the two angles. The vertical flange of the base angle should be slotted to permit movement when the tank is filled and emptied.

"A definite opening should be left at the inside perimeter in which oakum is filled with oil. Reinforcing as shown



should be tightly rammed before the tank in the sketch should be used in both faces of the bottom. The cost of the concrete mixture suggested in the above table will be less than the mortar mixture suggested in your columns as considerable less cement will be required."

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

BENZOL EQUIVALENT

Will you please advise, through the columns of The Oil and Gas Journal, the meaning of the term benzol equivalent as used in the specification for gasoline, and also the basis for its determination? —D. C. A.

Benzol equivalent is a term originally intended to serve for evaluating the knocking tendency of a fuel when used in the automobile engine. It is commonly used as meaning the percentage of benzol contained in the gasoline that is used for comparison.

Various blends of gasoline and benzol were in common use soon after the advent of the automobile and it was noticed that such blends produced a motor fuel that gave little or no knock in the motor. When search was first started for a standard material which could be compared with different gasolines of varying knock intensity, benzol was suggested because of its known property as a knock suppressor. One standard that was proposed consisted of blends of benzol and straight-run Pennsylvania gasoline. The difficulty with this idea was to obtain the gasoline of uniform composition and especially a constant knock value.

The method for testing the knocking tendency of a motor fuel is to compare, or try, the samples in some form of internal combustion engine. The one most extensively used at this time is the modified Delco one-cylinder engine. The important feature of this apparatus is the Midgley bouncing pin; so-called because it jumps upward and closes an electrical circuit when the fuel knocks. This current acts to decompose an acidulated water, held in a burette, with the evolution of gas, and the more the fuel knocks, the more the pin will bounce, so consequently keeping the circuit closed longer during a fixed period. The gas evolved is easily measured. A fuel of high knock rating, that is high benzol equivalent, producing but little gas, while a bad knocker, or one of low knock rating and equivalent to a small percentage of benzol, causes a large volume of gas to be formed.

The benzol equivalent then means that a fuel when burned in the test engine will knock and form the same volume of gas as the reference fuel of some definite benzol content. Formerly a blend considered to have a high knock rating was one having a 40 per cent benzol equivalent. This fuel was supposed to behave in a manner similar to a straightrun Pennsylvania gasoline which has been blended in the proportion 60 per cent gasoline and 40 per cent benzol. Today a good gasoline of high antiknock rating will equal a fuel of 60 per cent benzol equivalent.

The difficulty in obtaining a gasoline of definite composition has offered a serious objection to this scheme for rating the knocking tendency of gasoline. The octane number seems to be a better way to rate this property.

OCTANE NUMBER AND KNOCK TESTING

What is the octane number test? What is the relation between this octane number test and the antiknock value of the gasoline? What is the apparatus or the operating method giving this octane number with sufficient accuracy? We would like to know a standard method of (knock) testing commonly used in the United States.—W. U.

Ever since the discovery that the tendency to knock under conditions of the internal combustion motor is a property that varies with the fuel, efforts have been made to select a standard method for the quantitative measurement of the intensity of this knock. The investigations have to a large extent centered about the apparatus which could be relied upon to record in some form the extent of the knock produced by the fuel. It was early recognized that the results produced by one form of apparatus on a given fuel under certain conditions could not be duplicated with other apparatus working apparently under the same conditions. Also, the results obtained with one apparatus could not be duplicated with the same apparatus if the conditions were changed.

Some form of engine has been chosen by all investigators of the problem. A modified Delco single cylinder engine was proposed by Midgley and Boyd because it was simple and cheap. The important modification was the installation of the Midgley bouncing pin set in the top of the cylinder. This pin is not supposed to be influenced by the normal explosion of the fuel but is designed to lift or bounce and to make electrical contact with the sudden pressure rise of a detonating fuel. The electrical current is conducted to an acidulated solution contained in a burette; the gas volume increasing with the knocks.

Numerous changes have been made in this apparatus and the important variables recognized. The most important of these has been found to be temperature, in fact far greater than spark advance, speed, throttle opening and compression ratio. With the standardization of the variables influencing the results shown by the engine it became increasingly important to select a standard fuel which would serve as a unit for comparison with any fuel.

The choice of such a standard was difficult, because the substance selected should give definite results, always reproducible under the conditions of the test by different operators in various parts of the country, and quite easy to obtain. At the September, 1926, meeting of the American Chemical Society, Graham Edgar suggested as the knock rating standard, mixtures of normal heptane and isooctane (2.2.4. trimethyl pentane). These hydrocarbons, while very similar in all other properties, differ to a marked degree with respect to their tendency to knock when used as the fuel in an internal combustion engine. Normal heptane is extreme, knocking far worse than any known gasoline. The octane, on the other extreme, is almost free from the tendency to knock. Therefore, mixtures of these two hydrocarbons may be prepared in varying proportions to duplicate the knocking tendency of any gasoline or other motor fuel on the market at this time.

The octane number has been defined as the knock rating equivalent to a definite percentage of isooctane blended with normal heptane. For example, an octane number of 60 means that the knocking tendency of the sample is equivalent to that of a mixture of 40 per cent normal heptane and 60 per cent isooctane.

The national societies of the United States have not agreed on any one apparatus and method for determining the knock rating of gasoline and other motor fuels, but the method which has been outlined is reported to be more extensively used than any other.

Details of the method have frequently appeared in the literature; a few of the related articles may be mentioned:

C. K. Reiman, Ind. Eng. Chem.: 19, 1,055, 1927.

Graham Edgar, S.A.E. Journal; 22, 41, 1928.

Neil MacCoull, The Oil and Gas Journal, December 6, 1928, p. 146.

Graham Edgar, Ind. Eng. Chem.; 19, 145, 1927.

Earl Bartholemew, The Oil and Gas Journal; October 17, 1929, p. 32.

Bartholemew and Fricker, The Oil and Gas Journal; March 26, 1931, p. 38.

EAST TEXAS CRUDE OIL ANALYSIS

Could you furnish analysis of the oil from the East Texas Field, east of Tyler, Tex.?—J. W. H.

At this time the production in the East Texas Field is confined to three counties, Rusk, Smith and Upshur. The analysis following represents the composition of a sample from Rusk County.

Gravity A.P.I.		38.7
Pour point		45°F.
Sulphur		0.12%
Gasoline yield		39.7%
Grav.	57.6	
I.B.P.	106°F.	
Per cent off		
10 at	163	
20 at	194	
40 at	241	
50 at	264	
90 at	386	
Max.	431	
Fuel oil yield		59.1%
Grav.	26.3	
Flash	270°F.	
Fire	290	
Vis. @ 210°F.	43	
Cold test	80°F.	
Loss		1.2%

SALT WATER REMOVAL FROM OIL

Please advise if there is any preparation on the market that will remove or settle salt out of crude oil? If there is no chemical, advise if you know of any process that has been used successfully? —J. S. E.

Sodium chloride, common salt, is frequently associated with crude oil as the chief component of the accompanying salt water and very often the concentration amounts to 25 per cent, which is very close to saturation.

Salt is soluble in cold water to about the same extent as in hot water, so heating or cooling of a salt water solution can have no material effect on the salt content. Very often when salt water is produced with oil, the oil is cut or emulsified. That is, the mineral salts may form compounds which when finely divided through the atomizing action of the oil or gas under pressure, will be held in suspension and these droplets often hold small particles of sand to such an extent that the crude oil is not marketable.

Many schemes for treating this kind of oil have been proposed, and, as several of the successful methods make use of chemicals, the process is erroneously described as a chemical one for the removal of salt. The chemical precipitation of salt is expensive because the precipitating substances which are rapid and effective must include lead, mercury or silver. The use of the chemical compounds containing these elements on the scale necessary for the treatment of the large volumes of oil and water cannot be considered because of the cost.

Removal of salt, and salt water, is often accomplished by washing the oil and water mixture with water. Sometimes the refiner will have to process oil containing both salt water and very fine sand. One way to do this is to slightly warm the oil and then pass it through a series of settling tanks, the water and sediment being drawn off from the bottom of each tank. The same system is quite generally used in the field. Some operators may have a large number of settling tanks arranged in series. The slight elevation of temperature causes a decrease in density, or a thinning, of the oil so that separation and settling is accelerated.

In some installations in the field warm water is sprayed on the oil, effecting a scrubbing action as it falls through the oil, in addition to diluting the strong salty water, the three important factors being time, temperature and dilution.

BENTONITE PROPERTIES AND USE

There has recently been discovered near here extensive deposits of bentonite and barytes. In case you have any information pertaining to the use of these, especially bentonite, which I understand is used in the refining of oil, I will greatly appreciate it if you will favor us with some literature or information regarding use and market.—R. C. B.

Bentonite, a clay-like mineral earth derived from the mineral montmorillonite, and possibly other micaceous minerals that appear to have been formed from volcanic ash. It is very fine grained, plastic and has a waxy luster. The individual particles of bentonite are of microscopic size and adsorb from three to seven times their volume of water, swelling to over six times the original volume to form a sticky, jelly-like mass.

The relatively large surface presented by the particles causes the clay to possess adsorptive powers especially valued for the preparation of certain elements, dyes, salts, mineral oils, the softening of water, manufacture of paper, special soaps, cosmetics, as a stabilizer for emulsions and many other purposes. The particular use in the refining of oils is in contact filtering.

The composition of a purified bentonite from Texas and that of montmorillonite is shown in the table.

	Bentonite	Montmorillonite
Silica (SiO_2)	52.08	48.60
Alumina (Al_2O_3)	18.20	20.03
Iron oxide (Fe_2O_3)	2.88	1.55
Lime (CaO)	2.28	1.72
Magnesia (MgO)	4.48	5.24
Manganese (MnO)	....	0.16
Water (H_2O)	20.80	21.52
Total	100.72	98.52

Additional information may be found in a previous answer to a similar question in The Oil and Gas Journal, October 21, 1926, page 44. See also H. S. Spence, Canada Mines Bur., Inv. of Min'g Industry, page 1, 1924.

Ross and Shannon, The Minerals of Bentonite and Related Clays, Amer. Cer. Soc. J., 9, 77, 1926.

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Moore Types 90 and 91 Steel Rig Fronts are built for the heaviest drilling and pumping service. The use of structural steel girder beams, careful bracing, heavy base plates and electric welding are but a few features of design and fabrication which account for the strength and rigidty of this equipment.

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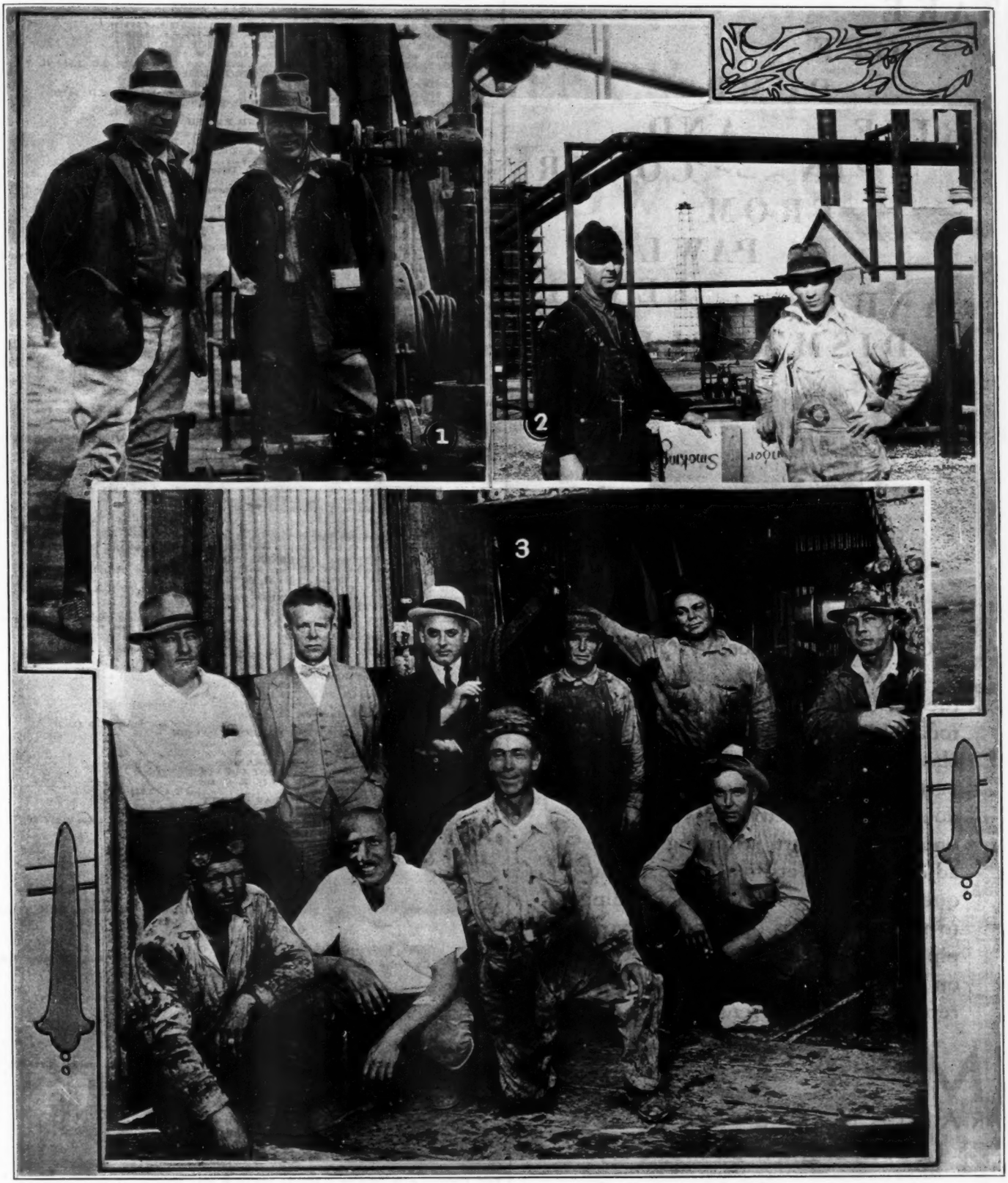

1—C. O. Moss and L. F. Danforth, production engineers, Deep Rock Oil Corporation, Asher, Okla. 2—C. J. Donaho, operator, and Dial Murphy, stillman, Indian Territory Illuminating Oil Company gasoline plant, Oklahoma City, Okla. 3—Drilling crew of Mesmer Oil Company, Mesmer City, Los Angeles County, California. Standing, left to right: W. P. Boardman, superintendent; Howard Teale, president; Bob Randall, general manager; J. I. Jones, John Swain and Clinton Wurtz. Front row: William Peck, Harry Perlin, Scotty McCroskey and Bud Sheton.

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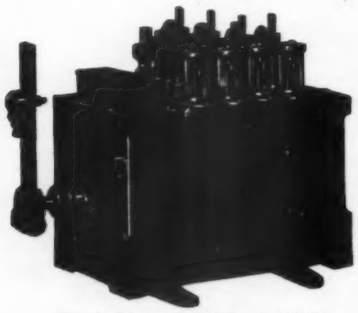

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DETROIT MICHIGAN

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 38)

Ben Merritt, tr.'s No. 1 Walluma, NE cor. SW SW, Sec. 29-12-12 ..... Rigging up.
E. T. Oakes' No. 1 R. H. Bryant et al, Sec. 30-13-15, 200 ft. N and W of SE cor. NE NW ..... Derrick.

NATCHITOCHES PARISH

W. M. Coats' No. 1 Collins, 730 ft. N, 50 ft. E, C, Sec. 28-9-10 ..... T.A. 4,091 ft.
J. W. Cooper et al's No. 1 Cooper, NW SW, Sec. 35-11-10.. S.D. 3,156 ft.
Cooper et al's No. 2-A Cooper, C SE SE, Sec. 32-11-10.. S.D. 1,518 ft.
C. M. Talley et al's No. 1 C. M. Talley, 1,980 ft. W, 660 ft. S, NE cor. SE, Sec. 29-11-10 ..... Tested dry; S.D. 1,380 ft.

RED RIVER PARISH

La. Oil & Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11 ..... Spudded in; S.D. 50 ft.
Lucky Strike Oil Co.'s No. 1 Chaffraix, 200 ft. S, 200 ft. E, C, Sec. 32-12-10 ..... T.A. 3,010 ft.

RICHLAND PARISH

Alto Gas Co.'s No. 2 Hunt, 660 ft. S and E, NW cor., Sec. 13-17-5 ..... Derrick.
Southern Carbon Co.'s No. 1 Rosengraut & Ducomb, 2,000 ft. E, 660 ft. S, NW cor., Sec. 24-17-5 ..... Drlg. 3,110 ft.
Southern Carbon Co.'s No. 2 Rosengraut & Ducomb, 1,980 ft. N, 660 ft. E, SW cor., Sec. 19-17-6 ..... Location.
Southern Carbon Co.'s No. 3 Rosengraut & Ducomb, 660 ft. S and E, NW cor., Sec. 30-17-6 ..... Location.
Southern Carbon Co.'s No. 1-B C. M. Noble, 2,966 ft. N, 1,535 ft. W, cor. Secs. 7, 8, 17 and 18, in Sec. 37-15-6.. Location.
United Gas Public Service Corp.'s No. 3 Earle, NE cor., Sec. 25-17-5 ..... Drlg. shale 2,335 ft.
United Gas Public Service Corp.'s No. 4 Earle, SE cor., Sec. 1-16-5e ..... Tested dry 2,402 ft; arranging to deepen.

SABINE PARISH

Durham Oil Co.'s No. 1 Polly (was Davis et al's), NE cor. NE NE, Sec. 18-8-12 (was Stacy et al's)..... S.D. 2,732 ft.
Diffie & Barnett's No. 1 Lites (was J. W. Clark's), 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 34-8-11.... S.D. 105 ft.
R. L. Gay tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13 ..... Drlg. 1,750 ft.
John Henry O. & G. Co.'s No. 2 Cook Land Co., 330 ft. W, 1,980 ft. S, NE cor., Sec. 34-10-12 ..... Dry and abd. 3,350 ft.
Lacey Prod. Co.'s No. 1 Cooper, 330 ft. N, 330 ft. W, SE cor. SW NW, Sec. 30-8-11 ..... W.O.S.R; T.D. 3,620 ft.
Lide et al's No. 1 Ponder, 990 ft. N, 990 ft. W, C, Sec. 15-7-11 ..... W.O.S.R. 2,300 ft.
Lide et al's No. 2 Ponder, 200 ft. S, 200 ft. E, NW cor. NE NW, Sec. 15-7-11 ..... Arranging to deepen 2,520 ft.
Jean Longoria's No. 1 Belton (no check), Sec. 21-9-13.... S.D. 1,400 ft.
Packard O. & G. Co.'s No. 1 Smith (was Caddo-Sabine Synd.'s), Sec. 3-7-10 ..... Tested dry 2,658 ft; arranging to deepen.
H. W. Perritt's No. 4 Bowman-Hicks, SE cor. SE NE, Sec. 2-7-12 ..... Location.
H. W. Perritt's No. 1 Boring, NW cor. NW NW, Sec. 11-7-12 ..... Set 6-in. 2,238 ft.
Sabine Royalties Co.'s No. 1 Skinner, SW NW, Sec. 5-8-11. Derrick.
A. H. Thames' No. 1 Edward est., 150 ft. NW of SE cor. NE SE, Sec. 8-8-13 ..... Began drlg. Apr. 10; set 10-in. 100 ft; drlg. 500 ft.
John Woodley's No. 1 Sabine Lbr. Co., 400 ft. S, 330 ft. W, NE cor. SE, Sec. 12-8-12 ..... Cmtd. 6⅝-in. csg. 2,310 ft.

TENSAS PARISH

Seip et al's No. 1 Fowler, C SW NE, Sec. 10-10-10 ..... Dry and abd. 1,077 ft.
A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... Fishing for D.S. 3,475 ft.

UNION PARISH

Fred A. Green's No. 1 U. S. Govt., 660 ft. N, 1,980 ft. W, SE cor. NE, Sec. 26-20-3e ..... Began drlg. Apr. 6; set 12½-in. 179 ft; set 8-in. 780 ft.
Nemours Corp.'s No. 1 Pace-Hamby, 660 ft. NE of SW cor., Sec. 35-22-3e ..... Drlg. 500 ft.

VERNON PARISH

Weir & Smith's No. 1 Delta Land Co., Sec. 14-2-11, 200 ft. S and W of NE cor. section ..... Drlg. shale 4,110 ft.

WEBSTER PARISH

Coyle tr.'s No. 1 Fraser, 200 ft. N, 200 ft. E, SW cor. NE SE, Sec. 27-23-11 ..... Derrick.
Red Hawk Oil Co.'s No. 1 Mathews, 330 ft. N, 330 ft. E, C, Sec. 11-23-9 ..... Drlg. chalk 2,555 ft.

WEST CARROLL PARISH

United Gas Public Service Co.'s No. 1 Pioneer Cooperage, 663 ft. E, 3,954 ft. S, NW cor., Sec. 29-21-9.... Rigging up.

ARKANSAS

CHICOT COUNTY

R. R. Smith's No. 1 Lytle, 660 ft. N, 660 ft. E, C, Sec. 21-23-3 ..... T.A. 2,925 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C NW SE, Sec. 4-20-8 ..... S.D; clearing titles 1,214 ft.

CLEBURNE COUNTY
(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

DALLAS COUNTY

E. C. Brewer's No. 1 W. E. Hillman, 330 ft. E, 40 ft. S, NW cor. SE NE, Sec. 20-10-13 ..... S.D; W.O. 2,846 ft.
J. H. James tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. NW NE, Sec. 11-9-15 ..... Reaming to bottom for D.S. test 2,502 ft.

GARLAND COUNTY
(Cable tools)

Givins et al's No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... 1,300 ft. 5 3/16-in. in hole; T.A. 3,756 ft.

GRANT COUNTY

Spann & McClung's No. 1 Sarah Page, 660 ft. W, 660 ft. S, NE cor. NW, Sec. 2-3-12 ..... Drlg. sandy shale 867 ft.

HOT SPRINGS COUNTY

John Watkins' No. 1 Cunningham (was J. R. Lockhart's), 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16.... S.D. for funds 220 ft.

LAFAYETTE COUNTY

McIver et al's No. 1 Hattie, NW cor. NE, Sec. 1-20-6..... T.A.
Smitherman & McDonald's No. 1 Reed, 200 ft. N, 200 ft. W, SE cor. NW NW, Sec. 16-15-22 ..... Setting 6⅝-in. packer 1,198 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-29 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D; W.O. 3,670 ft.

MADISON COUNTY
(Cable tools)

J. W. Baxter's No. 2 Hallin, C, Sec. 17-16-25 ..... T.A. 405 ft.
J. W. Baxter's No. 3 Hallin, NE SW, Sec. 1-17-26..... T.A. 42 ft.

MILLER COUNTY

Bullock Oil Co.'s No. 1 Hervey, SE NE, Sec. 33-14-26.... Abd. 2,813 ft.
East Texas O. & G. Co.'s No. 1 Harvey, 500 ft. E, 300 ft. S, NW cor., Sec. 3-15-26 ..... T.A. 910 ft.
E. & F. Oil Co.'s No. 1 E. L. Beck, 200 ft. S, 200 ft. E, NW cor. SW, Sec. 26-15-26 ..... T.A. 2,968 ft.
Fitzwater et al's No. 1 Beck, 200 ft. N, 200 ft. W, SE cor. SW SE, Sec. 23-15-26 ..... T.A. 93 ft.
Gusher Bend Oil Co.'s No. 1 Adams, 120 ft. S, 300 ft. W, NE cor. NW, Sec. 26-14-26 ..... S.D. 2,635 ft.
J. D. McRae's No. 1 Smith, 150 ft. N, 150 ft. W, SE cor., Sec. 28-16-26 ..... Derrick.

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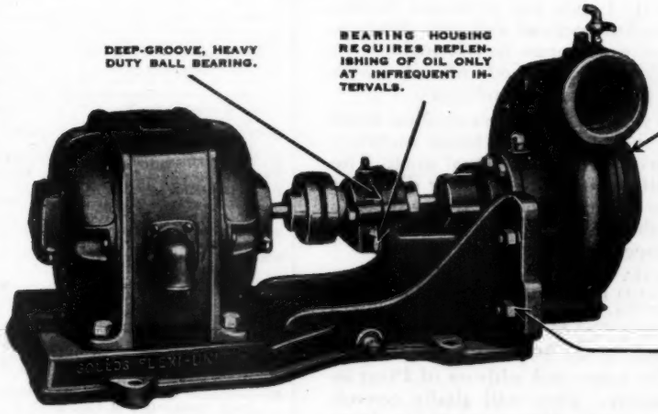
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BEARING HOUSING REQUIRES REPLENISHING OF OIL ONLY AT INFREQUENT INTERVALS.
SELF-VENTING CASING ELIMINATES AIR BINDING. PUMP EQUIPPED WITH OPEN TYPE, NON-CLOGGING, HIGH-EFFICIENCY IMPELLER.
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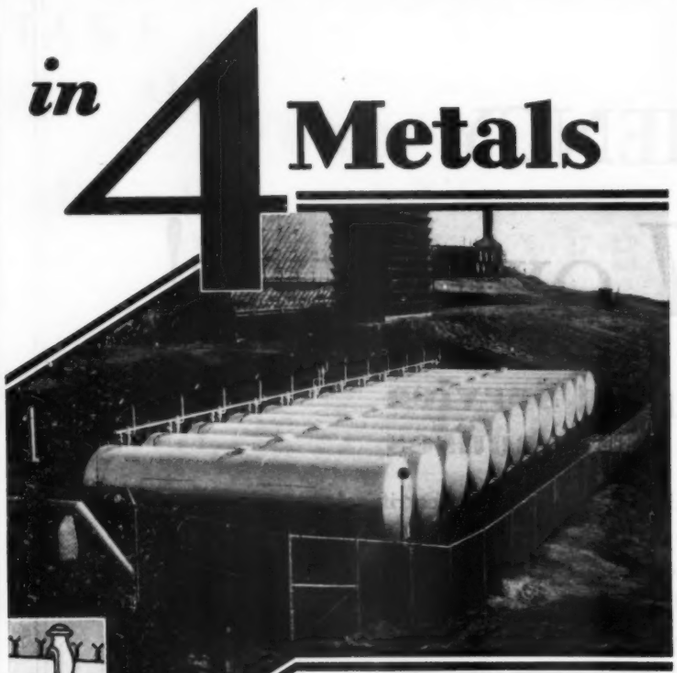

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CHAIN LINK OR ORNAMENTAL WROUGHT IRON

OUACHITA COUNTY

Belmont et al's No. 1 Buck, SE cor. SE SW, Sec. 16-15-17 ..... S.D. 2,907 ft.
Copenhaven et al's No. 1 Elliott, Sec. 11-15-17 ..... Drlg. plug 2,190 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-14 ..... Coring 2,812 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... Derrick.

POPE COUNTY

Ark.-La. P. L. Co.'s No. 1 Baird, 760 ft. S, 660 ft. E, NW cor., Sec. 11-7-20 ..... Coring gray slate 3,328 ft.
Ark.-La. P. L. Co.'s No. 2 McFaddin, 685 ft. N, 485 ft. W, SE cor. NE SW, Sec. 15-9-21 ..... Drlg. soft sand 4,202 ft.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 26-4-26 ..... Fishing for bit cor. T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-8n-29 ..... Drlg. 1,850 ft.

SEBASTIAN COUNTY

Ozark Natural Gas Co.'s No. 1 A. B. Bryant, C SE NE, Sec. 28-8-30 ..... Drlg shale 1,150 ft.

UNION COUNTY

Chapman & Wilson's No. 1 A. H. Hadley, 330 ft. N, 380 ft. E, SW cor. NE SW, Sec. 3-18-13 ..... 600 ft. fluid 30% S.W. in hole; T.A. 3,570 ft.
Wilson & Chapman's No. 1 N. Parker, 330 ft. S and W, NE cor. NE SE ..... Began drlg. Apr. 12; drlg. 300 ft.
S. B. Hickman's No. 1 Hogg, 330 ft. S, 150 ft. E, NW cor. SE SE, Sec. 35-16-17 ..... Arranging to whipstock 2,090 ft; T.D. 3,328 ft.

VAN BUREN COUNTY

Glenn Kohle et al's No. 1 Scalan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... T.A. 50 ft.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Fishing for bit 1,780 ft.
H. H. Taylor et al's No. 1 Runny, C NE SW, Sec. 1-13-29 .. S.D. 1,700 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Devore & Midfield's No. 1 Roy B. Cooper, 200 ft. S, 200 ft. W of NE cor. R. B. Cooper 115-ac. tr., Wm. Ward Sur. ..... S.D. 1,048 ft.
Maud-Redwater Oil Co.'s No. 1 Merritt, 175 ft. N, 175 ft. E, SE cor. G. W. Hardidge 100-ac. tr. on Floyd Merritt tr. in Y. S. McKinney Sur. ..... Drlg. chalk 2,000 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W of SW cor. J. H. Dyer Sur. ..... Derrick.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... Drlg. 2,560 ft.

CAMP COUNTY

McDonald Bros.' No. 1 Tillery, 150 ft. E, 450 ft. S, NW cor. 127-ac. tr. in J. H. Murphy Sur. ..... S.D. 3,600 ft.

CASS COUNTY

E. K. Atkinson's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... Derrick.
Davis & Pigg's No. 1 Roy Brian, SW cor. Roy Bryan 88-ac. tr., Albert H. Latimer Sur. ..... Drlg. gumbo 1,150 ft.
Sam B. Hunter's No. 1 Marshall Felker, 1,800 ft. E, 160 ft. N, SW cor. 66-ac. tr., L. Chambers Sur., landowner shows Jenkins on map. ..... Drlg. shale 3,305 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... Coring shale 3,200 ft.
Olds & Smith's No. 1 Atheny, 3,056 ft. W-E line, 856 ft. S-N line, J. C. Byers Sur. ..... S.D. 1,534 ft. (correct depth).
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. ..... S.D. 2,275 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 955 ft.

HARRISON COUNTY

Corona Pet. Co.'s No. 1 A. J. Bohler, C, Bohler 140 ac. in SW cor. S. F. Sparks Sur. ..... Drlg. 2,800 ft.
Elmore & Bonner's No. 1 J. C. Lowery, in center of J. C. Lowery 81-ac. tr., W. W. O. Stanfield Sur. ..... Rigging up.
Geo. L. Pace ,et al's No. 1 T. G. and Eugene Barker, 710 ft. N of S line, 1,930 ft. W of E line, SE cor. 230-ac. tr., Victor Pedraso Sur. ..... Rig up.
O. H. Parkening's No. 1 T. J. Taylor, C, Blk. 32, W. H. Payne Sur. ..... Rigging up.
O. H. Parkening's No. 2 T. J. Taylor, C, J. C. Hawley Sur. ..... Derrick.
W. G. Ray Drlg. Co.'s No. 1 F. C. Hall, D. Davis Sur. ..... Drlg. 3,630 ft.
Rowe-Nichols' No. 1 Pitts, E. A. Merchant Sur. ..... Location.
Ryan Consolidated Pet. Corp.'s No. 1 Dr. H. H. Key, 1,500 varas N of SE line, 500 varas E of SW line, of E. Carroll Sur. ..... Derrick pattern.
Seigal Bros. and Kelinson's No. 1 Taylor (no check), F. O'Neil Sur. ..... Derrick.
Sinclair O. & G. Co.'s No. 1 Cora L. Davenport, Jno. B. Morton Sur. ..... Dry and abd. 3,735 ft.

MARION COUNTY

Eden Oil Co.'s No. 1 J. M. DeWare est., 150 ft. S, 1,507 ft. E, NW cor., S. R. Hazelwood Sur. ..... Drlg. 2,050 ft.
Gist, Claunch & Dodson's No. 1 Miller, 1,470 ft. E line, 725 ft. N line, SW cor. H. Fulgran H.R. Sur. ..... Rigging up.
Geo. Hindman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. repairs 400 ft.
Hindeman & Rhondo's No. 1 McGaughey, 1,547 ft. W, most northerly SW cor., 1,638 ft. N most northerly S line, W. J. Willis Sur. ..... S.D. 2,300 ft.
P. E. Hussey's No. 1 A. A. Trammell, Chas Lockhart Sur. ..... S.D. 1,884 ft.
Sinclair O. & G. Co.'s No. 1 Wright, Jacob Grover Sur. ... Dry and abd. 3,460 ft.
Sinclair Oil & Gas Co.'s No. 1 D. R. Coulter, W. Russell Sur. ..... Coring red shale 3,868 ft.

PANOLA COUNTY

Everette Drlg. Co.'s No. 1 E. L. McDaniels, 200 ft. S, 200 ft. W, NE cor. McDaniels' 116 ac., Alanson Barr Sur. ..... S.D. 350 ft.
Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur. .. Location.
The Texas Co.'s No. 2 G. W. Brumble, 400 ft. S, 200 ft. E, NW cor., Jno. Womack Sur. ..... Drlg. lime 3,315 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. ..... S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. ..... S.D. 2,280 ft.

SHELBY COUNTY

I. M. Bradley's No. 1 Ashberry (no check), G. W. Mitchell Sur. ..... Rig up.
E. L. Chapman's No. 1 Pickering Lbr. Co., C. E. Henry (headright) ..... Drlg. shale 2,340 ft.
Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ..... S.D. 3,111 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., Wm. English Sur. ..... Moving in rig.
T. A. Martin's No. 1 J. B. Bush, S 8° E, 2,000 ft. from NW cor. J. B. Bush's 77-ac. tr., thence E at right angles to said line 200 ft., Alfred Lindsey Sur. ..... Derrick.
Henry Moulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur. ..... Set 12-in. 500 ft.
Sloan Prospecting Co.'s No. 1 Sanford, approximately 300 ft. N and 200 ft. E, SW cor. B. Sanford 49-ac. tr. in M. M. Vann Sur. ..... Derrick (correction).
Sloan Prospecting Co.'s No. 1 Windham, H. English H.R.S. ..... Spudding in.

ROCKY MOUNTAIN AREA

(Continued from Page 44)

Oil & Gas Co. made a gas discovery several years ago. Mention of this structure was made in Bulletin No. 751-G of the United States Geological Survey by Julian D. Sears, published in 1924, and an accompanying map showed the approximate location of the anticline. The well was spotted by the Mountain Fuel Supply Co. early in 1929 and rig was built, but spudding did not begin until last spring. The 20-inch was cemented at 80 feet, and the 15½-inch at 1,240 feet. Drilling continued to 2,145 feet, at which depth the 13⅜-inch casing was set and operations were suspended for the winter. It resumed drilling the past week and had gone only a few feet when it reached the pay. The identity of the horizon is not given, but the operation was started as a test of the Tertiary beds, the Wasatch formation being at the surface. The well will be connected up with the natural gas pipe line from the Hiawatha Field into Utah and Idaho.

The only other operation in Moffat County is the Mountain Fuel Supply Co.'s No. 2 State, Tract 37-12n-100, Hiawatha Dome, which is fishing for spear at 2,220 feet.

Weld County

The deal closed the past week whereby the Reiter-Foster Oil Co. contracted with the Platte Valley Petroleum Co. to drill a deep test on the Ida Johnson tract on the Greasewood Dome in Weld County inaugurates the first drilling to be started since the Platte Valley's No. 1 Patterson, NE SE NW, Section 24-6n-61, came in last October at 6,647 feet.

While the major companies have leased up large blocks, not only on the Greasewood Dome, but in other areas extending down into Arapahoe County and as far east as the Kansas-Nebraska line, they have been anxious to avoid an expensive wildcatting campaign and have made practically no committments to drill in the near future. The Platte Valley company, on the contrary, had several drilling obligations and there was considerable rivalry among several of the major companies to obtain an agreement. The Reiter-Foster deal provides for the immediate drilling of the Johnson tract which offsets the discovery on the north and location will be in the C NE NW, Section 24-6n-61. The company is not a stranger to this territory as Paul Ache, the president, has been identified with Rocky Mountain operations for several years and the company has interests in several districts including the Fort Morgan area, where the Indian Territory company is drilling, and the Hiawatha gas field in the northwestern part of the State. If the Ida Johnson well is commercial, then the company is obligated to drill two more wells. These probably will be on the Wilson and Sarah Johnson tracts. When the three wells are completed, the company will be given a half interest in 1,200 acres and cost of the wells out of production. It also has an option to purchase the Platte Valley company's share of the oil. The discovery well is not involved in this deal and the Continental Oil Co. is purchasing that production for its Denver refinery. The deal also gives Reiter-Foster a preference on an additional 1,200 acres under certain conditions. Rotary equipment is now moving to location and the well will be rushed to completion. It will be carried to 7,200 feet to test the Dakota series, if necessary. The operators, without a single exception, express the belief that an important field will be opened up in that area, but the surface geology is difficult to work out and the drill may be the only method of outlining the structure. Some hope is held out that the seismograph will be of some value. The discovery well continues to make around 350 bbls. daily, has shown no water, and has held remarkably steady. There is a general belief that if deepened into the sand it would respond with an increase in production.

Morgan County

The Indian Territory Illuminating Oil Co.'s No. 1 State, C NE NE, Section 16-1n-57, Fort Morgan anticline, is still bottomed at 4,090 feet and continuing its efforts to land the 6⅝-inch on bottom. It has been held up for some time at this depth with casing trouble and unless the difficulty is overcome soon a rotary may be installed to complete the well.

Arapahoe County

The MacDeb Drilling Co.'s No. 1 Fitzsimmons, NE, Section 7-4s-66, near Aurora, is held up at 5,800 feet by a fishing job, the tools being in the hole.

Adams County

Nettie M. Slatt's No. 1 Hills, SE cor., Section 27-3s-64, Watkins district, has resumed at 2,900 feet after installing a new cable.

Jefferson County

The Ruby Hill Oil & Gas Co.'s No. 1 Braden, SE cor., Section 24-4s-69, near Denver, is shut down for repairs at 3,879 feet. At this depth it is in a very hard sandstone.

Park County

The South Park Oil & Gas Co.'s No. 1 Esche, SE cor. NW, Section 5-9s-76, on the Muleshoe Dome in Park County, the highest well in this part of the country, if not in the United States, reported a good show of live green oil this week at a depth of 1,040 feet in a sandy shale, believed to be just above the Hygienne in the Pierre. There was sufficient oil to coat the slush pit. The hole was drilled to 1,065 feet with the showing continuing and operations were suspended until a control head could be moved in from Denver. This will be an 8-inch control which will be placed on the 10-inch with a reducer. The hole is open below the 10-inch at around 550 feet. The structure was worked out for the company by D. A. Knight and the possibilities in that area are looked upon rather favorably. The South Park Oil Co.'s No. 1 Milligan, NE cor. SE, Section 13-8s-76, Jefferson district, a separate organization from that just mentioned, had a show of noninflammable gas at 1,795 feet, corrected steel line measurement, and drilled to 1,818 feet in a very hard sandstone. Below the original show it ran into a thin shell that made sufficient gas to clean the hole of water and the 8¼-inch is being lowered to 1,807 feet to make a shut-off.

Larimer County

Oil being produced on the Berthoud Dome by the Five Square Oil & Gas Co. and the Standard Oil Co. of Colorado is being shipped to the Utah Oil Refining Co. at Salt Lake City. March shipments aggregated 797 bbls. These companies had one well in the Muddy sand which held steadily at 14 bbls. a day natural for the entire year of 1930 in an uncompleted condition and recently a second well which swabbed 90 bbls. in seven hours was completed. The Standard's No. 1 Hall, NE cor., Section 20-4n-69, cemented the 12½-inch below the sand at 668-700 feet and has been temporarily completed as a gas well. A machine will be set up 300 feet to the west for No. 2 Hall to explore the shallow horizon which was not found in the wells to the east. Its No. 2 State, C NW, Section 16-4-69, is ready to spud, and its No. 1 Wilson, NW cor. SW, Section 21-4-69, is drilling below 800 feet.

Montezuma County

The United States Government is drilling a well near Spruce Tree Camp, in the Mesa Verde National Park, which is attracting some attention. It is being put down to develop a water supply for domestic purposes. The Denver & Rio Grande Western Railroad is under contract to build a $150,000 hotel if sufficient water is developed. The well reached the top of the Dakota at around 3,200 feet and at 3,400 feet it had a hole full of sulphur water. It is underreaming the 8¼-inch for a shut-off and will go on down to the La Plata. A location has been made for Fred C. Haller's No. 2 Carr, C NE SW, Section 33-36n-14, Mount Lookout structure, near the entrance to the Mesa Verde National Park. This is the first of a series of five wells to be drilled to develop a supply of gas. These interests have drilled several shallow wells which encountered gas in the Dakota at 700 feet and have organized the Northern Pipe Line Co. and the Tri-City Gas Co. to pipe the gas to Mancos, Dolores and Cortez and deliver it to domestic consumers. Franchises have been obtained in the three towns. The new location was spotted by C. E. Shoenfelt of Denver.

G. H. Talcott and others' No. 1, NE cor., Section 7-35n-16w, near the entrance to McElmo Canon, is reported shut down at 594 feet in the base of the McElmo with a hole full of water. This formation outcrops at a higher elevation a short distance to the north in McElmo Canon.

UTAH

The Utah Southern Oil Co.'s No. 1 Balsey, C NE NE, Section 31-23-21, Salt Valley structure, is drilling at 2,000 feet in salt in a 10-inch hole. The bottom of the salt is estimated at 2,500 to 3,000 feet.

MONTANA

An Associated Press dispatch from Great Falls quotes the Shelby correspondent of the Great Falls Leader as saying that the B. & H. Oil Co.'s No. 1 Haines, SE SE, Section 2-34n-6w, in the Cut Bank area, had come in as a 2,000-bbl. well, but from other sources the report is discounted considerably. Last January this well was reported to have had a show of oil at 2,761-62 feet in the top of the Sunburst sand. Underreaming was in progress to lower the 8¼-inch when the string dropped 30 feet and was badly damaged. Since then efforts have been in progress to swedge out the pipe and land it on bottom. The most favorable report received was that the hole had 1,600 feet of oil standing in it and that there was no gas. Some work on the well the past few weeks was said to have been confined to efforts to get a string of 5⅛-inch pipe through the larger string.

Toole County

Johnson and others' No. 1 Lutz, C NW NW, Section 34-33-2e, Kevin-Sunburst Field, has commenced spudding.

Carbon County

The Ohio Oil Co.'s No. 1 Montana Industrial, SE SW NE, Section 11-7s-21, Dry Creek Dome, is drilling at 4,580 feet, and probably is below the second Frontier which showed gas in the core. Same company's No. 1 Souders, C SW SW, Section 2-7s-21, has resumed drilling at 1,340 feet after changing over to rotary. Cook, Orchard and others' No. 1 Armstrong, SW cor. NW, Section 7-7-21, is drilling at 770 feet. The 15½-inch was cemented at 765 feet.

Rosebud County

The Prairie Oil & Gas Co.'s No. 1-X, Contract 3, SW NW, Section 26-10-39, Porcupine Dome, is fishing for tools at a total depth of 2,415 feet. It had been drilling out cement after setting the 12½-inch to make a water shut-off.

WYOMING

Midway Dome

The Midwest Refining Co.'s No. 11 Middy, C NE NE, Section 23-35-79, Midway Dome, is bottomed at 6,042 feet in a white water sand and was still coring in sand at last reports. The Muddy sand was not in place and the Dakota was topped at 5,967 feet. Sixteen feet of sand was cored, of which 12 feet showed saturation, and the hole then went back into shale. It is probable that the hole will be carried on down to the Sundance.

Park County

The Henderson Producing Co.'s No. 1, Section 25-58-100, in the southern part of the Elk Basin Field, is reported to be a 10,000,000-foot gas well 4 feet in the Dakota at a total depth of 2,836 feet. The well has been drilling at intervals for the past two years.

The Department of the Interior will receive bids at Cheyenne on May 23 at the land office for two tracts on the southwestern side of the Byron Dome consisting of Lots 2 and 3, Section 23-56-97, containing 30.4 and 20.09 acres.

Converse County

The Ohio Oil Co.'s No. 5 Jones, NW NE NE, Section 9-33-76, Big Muddy Field, a test of the Lakota sand, has been completed at a total depth of 4,364 feet, 22 feet in that sand. After running the 2½-inch tubing, it flowed 345 bbls. daily.

Niobrara County

The Indian Petroleum Co.'s No. 1, NW NE, Section 7-35-65, Lance Creek Field, which has the Sundance as the objective, set the 6¼-inch at 3,733 feet, cut a water sand at 3,737-50 feet and had a show of oil in the Dakota at 3,750-57 feet.

Big Horn County

The Utah Southern Oil Co.'s No. 3 Government, NE cor. SW, Section 29-56-97, Garland Dome, is bottomed at 3,760 feet and is moving in a Sullivan hydraulic control rotary to deepen 500 feet into the Madison lime oil pay. The company controls 767 acres practically on top of the north half of the dome. The Ohio Oil Co.'s No. 1 Smith, Lot 61, Section 33-56-97, is bottomed at 1,274 feet and redrilling at 1,134 feet.

Weston County

The Chadron-Osage Co.'s No. 2, CSL NW SE, Section 31-46-63, has a Star rig on location in the Osage Field, and Tom Don's No. 2, NW cor. SE, Section 23-46-64, is building standard rig. The Decker Oil Co.'s No. 1, NW NE NE, Section 1-45-64, is shut down for casing at 2,124 feet. Hugh Updike's No. 1, SE SW NW, Section 23-46-64, is rigging up, and Clark and others' No. 1, SE NE NE, Section 15-46-64, set the 8¼-inch at 1,524 feet and is waiting.

Fremont County

The Producers & Refiners Corp.'s No. 10, SE NW SW, Section 14-32-95, Big Sand Draw, a test of horizons below the gas in the upper Frontier, is coring in sand at 5,027 feet and preparing to test. This is about the depth at which the Sundance was expected. Several gas horizons have been encountered below the formations heretofore drilled.

The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is starting up again at a total depth of 4,485 feet. A core barrel will be run to core the formations just below the bottom. Heavy gas pressure has caused much trouble at this depth and no new hole has been made for several months.

Rocky Mountain Production

Average daily production in week ending April 18:

WYOMING	
Salt Creek	26,210
Big Muddy	2,280
Byron	10
Dallas-Derby	750
Dutton Creek	110
Elk Basin	750
Ferris	40
Frannie	890
Grass Creek	2,150
Hudson	370
LaBarge	1,010
Lance Creek	180
Lost Soldier	3,860
Lovell	10
Oregon Basin	1,320
Osage	1,180
Rock River	2,020
Poison Spider	270
Simpson Ridge	.....
South Casper	220
Teapot	30
Warm Springs	.....
Total Wyoming	43,660
MONTANA	
Buckley-Border	760
Cat Creek	1,060
Dry Creek	700
Kevin-Sunburst	4,450
Lake Basin	50
Pondera	1,600
Total Montana	8,620
COLORADO	
Florence	460
Fort Collins	980
Iles	1,040
Moffat	970
Orchard	350
Rangely	50
Tow Creek	360
Total Colorado	4,210
NEW MEXICO	
Rattlesnake	1,250
Hogback	450
Table Mesa	76
Artesia	.....
Cap Rock	.....
Getty	147
Hobbs	32,715
Jal	1,200
Lea City	2,620
Eunice	863
Texas-Pacific area	153
Total New Mexico	39,474
Total Rocky Mountain fields	95,904
Total previous week	93,530
Difference	2,374

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Republic Supply Company

OIL AND GAS WELL SUPPLIES

Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS

NORTH AND WEST TEXAS

(Continued from Page 50)

2,244 feet. Kelly and others' No. 1 Long, dry and abandoned, total depth 1,790 feet.

Eastland County

Hazlip and others' No. 1 Sheed, dry and abandoned, total depth 3,661 feet. Lone Star Gas Co.'s No. 1 Groves-Phillips, gas sand 3,560-78 feet, initial production 16,660,000 feet of gas, total depth 3,578 feet.

Hamilton County

McCamey and others' No. 1 Edison, dry and abandoned, total depth 3,854 feet.

Palo Pinto County

Indian Royalty Co.'s No. 1 Allen, total depth 4,002 feet, plugged back to 1,745 feet, top pay 1,715-35 feet, initial production 250,000 feet of gas. Peters and others' No. 1 Stephens, top sand 2,984-3,036 feet, shot 40 quarts 2,998-3,036 feet, initial production 5,620,000 feet of gas, total depth 3,036 feet. Walker and others' No. 1 Loffin Estate, total depth 3,231 feet, plugged back to 3,010 feet, shot 100 quarts 2,967-3,006 feet, initial production 11,230,000 feet of gas.

Shackelford County

Joe Baldi's No. 1 Rice, temporarily abandoned, total depth 951 feet.

COMPLETIONS FOR WEST TEXAS

Loving County

California Oil Co.'s No. 2 Allen, top pay 4,307 feet, initial production 175 bbls., total depth 4,352 feet. Henshaw and others' No. 2 Reagan and McElvain, abandoned location.

Pecos County

Dittman's No. 1 Jackson, dry and abandoned, total depth 1,596 feet. Magnolia Petroleum Co.'s No. 1 Eaton, top pay 1,596 feet, initial production 1 bbl., total depth 1,618 feet.

Fisher County

Roeser and Pendleton's No. 1 Gribble, dry and abandoned, total depth 3,275 feet.

Howard County

Moody Oil Corp.'s No. 33-B Roberts, temporarily abandoned, total depth 261 feet.

Irion County

Perry Fox's No. 1 Williams, dry and abandoned, total depth 1,490 feet.

RUNS THROUGH TRUNK LINES

Company, size and location—	Bbls.
Atlantic, 10-inch, Houston	20,753
Gulf, 10-inch, Ranger	5,091
Humble, 2 and 8-inch, San Angelo	21,139
Humble, 10 and 12-inch, Comyn	40,089
Illinois, 2 and 8-inch, Del Rio	29,859
Magnolia, 8-inch, De Leon	18,901
Panotex, 8-inch, El Paso	12,054
Shell, 10-inch, Healdton	22,715
Shell, 10-inch, Houston	28,771
Texas, 12-inch, Houston	22,251
Total	221,623

RUNS TO WEST TEXAS REFINERIES

Big Spring Ref. Co., Big Spring	609
Burford Ref. Co., Pecos	4,338
Cosden Ref. Co., Big Spring	8,061
Col-Tex Ref. Co., Colorado	8,381
Greatwestern Ref. Co., Big Spring	2,795
Tonkawa Ref. Co., Pyote	1,576
Wickett Ref. Co., Wickett	276
Total	26,036

TANK CAR SHIPMENTS

Big Lake from Texon	3,000
Fox and Thorsen from Mertzon	72
Southern C. O. Pur. Co. from Wickett	3,833
American Ref. Co. from Pyote	1,294
Total	8,199
Total daily average production	277,262
Total daily av. distribution	255,858
Daily average to storage	21,404

COMPLETIONS IN NORTH CENTRAL TEXAS

Archer County

Wallace's No. 1 Kemp and Kempner, dry and abandoned, total depth 1,918 feet. Hedrick and Camp's No. 2 Webb, top pay 738 feet, initial production 20 bbls., total depth 748 feet. Wallace's No. 2 Kemp and Kempner, dry and abandoned, total depth 1,911 feet.

Baylor County

Bert Horn's No. 1 Porter, dry and abandoned, total depth 1,850 feet. Hart and others' No. 1 Stevens, temporarily abandoned, total depth 1,323 feet.

Young County

Art and Rathke Oil Co.'s No. 1 Belknap Cattle Co., dry and abandoned, total depth 915 feet. Gorrie and others' No. 1 Beckman, dry and abandoned, total depth 1,313 feet. Hynes and others' No. 1 Casey, dry and abandoned, total depth 720 feet. Jenkins' No. 1 Lowe, dry and abandoned, total depth 900 feet. Oil News Publication Co.'s No. 1 Dollins, dry and abandoned, total depth 706 feet. Primrose Refining Co.'s No. 1 Routon, dry and abandoned, total depth 840 feet. Putnam Oil Co. and Panhandle Refining Co.'s No. 1 Choat, dry and abandoned, total depth 670 feet. Simmon's No. 1 Hawkins, dry and abandoned, total depth 518 feet. Swanson's No. 1 Humphrey, dry and abandoned, total depth 957 feet. The Texas Company's No. 1 Drum, dry and abandoned, total depth 701 feet. Watson and others' No. 2 Watson, dry and abandoned, total depth 806 feet. Wolff's No. 1 Howard, dry and abandoned, total depth 790 feet. Christin Brothers' No. 1 McLaren and others, top pay 2,630 feet, initial production 35 bbls., total depth 2,642 feet.

COMPLETIONS IN PANHANDLE DISTRICT

Carson County

Texas Interstate Pipe Line Co.'s No. 1-86 Burnett, first gas 2,065-2,145-2,165 feet, initial production 42,000,000 feet of gas, total depth 2,335 feet.

Gray County

Albert Beck's No. 1 Sullivan, top pay 3,033-60 feet, initial production 72 bbls. oil, total depth 3,060 feet. Operators Royalty & Production Co.'s No. 8 Harrah, top pay 3,162-82 feet, initial production 400 bbls. swabbing, total depth 3,216 feet. The Texas Company's No. 1 Webb, total depth 3,798 feet, plugged back to 2,745 feet, top pay 2,670-75 feet, shot 100 quarts 2,670-2,740 feet, initial production 56 bbls. swabbing.

Hall County

McAuley and others' No. 1, dry and abandoned, total depth 650 feet.

Hutchinson County

Stanolind Oil & Gas Co.'s No. 1 G. Martinez, total depth 3,498 feet, plugged back to 3,370 feet, top big gas pay 3,225-40 feet, initial production 5,000,000 feet of gas.

Moore County

Plains Holding Co.'s No. 1 Bridges, total depth 3,420 feet, plugged back to 3,184 feet, shot 60 quarts 2,715-40 feet and 3,155-75 feet, initial production 6,200,000 feet of gas.

Wheeler County

Fain and McGaha's No. 1 Oscar Close, top pay 1,705-1,820 feet, initial production 39,300,000 feet of gas, with 415 pounds rock pressure, total depth 1,822 feet.

NORTH TEXAS PRODUCTION
Week ending April 18

Panhandle District—	Bbls.
Carson County	3,605
Hutchinson County	8,915
Gray County	42,680
Moore County	220
Potter County	....
Wheeler County	250
Total production this week	55,670
Total production last week	49,924
Increase	5,746
Wichita Falls District—	
Archer County	11,535
Baylor County	502
Clay County	620
Cooke County	1,830
Foard County	46
Jack County	1,101
Haskell County	25
Montague County	3,615
Throckmorton County	380
Wilbarger County	9,961
Wichita County	18,996
Young County	12,995
Total production this week	61,606
Total production last week	60,540
Increase	1,066
Ranger District—	
Brown County	3,591
Callahan County	2,421
Coleman County	1,680
Comanche County	690
Palo Pinto County	371
Eastland County	3,210
Shackelford County	3,840
Stephens County	4,569
Total production this week	20,372
Total production last week	19,790
Increase	582

CANADIAN GOVERNMENT LINE

CHATHAM, Ontario, Apr. 18.—The laying of a pipe line as a joint federal and provincial government undertaking to transport Turner Valley gas as far east as Winnipeg is being discussed by officials of the Alberta government.

AN "AMERICAN" IN OKLAHOMA

AN "American" Oil Well Pumping Unit is on the job at the Carter Oil Company plant at Oilton, Oklahoma. This is a No. 4-A 1822 unit, installed in a well approximately 2500 ft. deep, using 2" tubing and ¾" rods, and pumping on a 24" stroke. This particular unit is direct-driven by an electric motor.

"American" Oil Well Units provide for a wide variance in the type of drive and are designed for a wide range of conditions. They are totally enclosed, compact units. Gears and pinions are oil immersed, and all bearings except two are automatically lubricated. Power consumption is small, and they are efficient and dependable in performance.

Detailed figures and engineering data of typical installations of this equipment in both this country and others are available. Ask for them!

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THE AMERICAN WELL WORKS

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ROUTINE TESTING OF CONTACT CLAYS

(Continued from Page 56)

for practical work. The best silica gels received at our laboratory were less than one-tenth as efficient as some of the California clays on acid treated Mid-Continent oils and this of course excludes them for the work under discussion. According to experts on silica gel it would be feasible to reproduce gels of exactly the same efficiency.

Having found a way to determine at least relative efficiencies there remained to be developed a method that gives reproducable results. Thanks to the work of Prutzmann and his co-workers this has been achieved. The procedure of the method is well known to all who are concerned with contact clays, and therefore shall not be repeated here. Several modifications of the original method were developed in the course of time; some of which contained considerable improvements. At one laboratory for instance, contacting is carried out in an atmosphere of carbon dioxide to avoid possible darkening of the oil by oxidation. For referee tests this is undoubtedly commendable—for routine tests though it is rather complicated, and normally results are the same as if carried out in the presence of air.

At the laboratories of the Texas Pacific Coal & Oil Co. efforts were mainly directed towards shortening the time for completing the test. According to the original method about one week is required to go through the complete procedure. Max B. Miller's method can be finished in three 8-hour days. Our laboratory reports results 26 to 28 hours after notification of the arrival of a clay car. Every car load of clay is tested before being unloaded. It is a matter of good economy to avoid demurrage on railroad cars. Unloading a clay car is almost a day's work and if a car shall not be held over permissible time the laboratory must give its approval with all possible speed. Our usual procedure is as follows:

The office notifies the laboratory usually at 11 a.m. of the arrival of a clay car at the nearest railroad yard. A laboratory man goes out at once and takes samples from various parts of the car. The combined sample weighing about 5 pounds is quartered according to standard rules. A 1-pound sample is dried at 220 to 230° F. for two hours to facilitates grinding and then is pulverized in a laboratory grinder to pass a 200-mesh screen.

Treating Method

The treating is carried out in duplicate because occasionally, though not frequently, freak results have been obtained. Two hundred grams of the ground sample are placed in a 1,000 c.c. Erlenmeyer wide neck flask; 100 grams 93-94 per cent (66° Be.) sulphuric acid diluted to 20 per cent are added and the flask is immersed up to its neck into a boiling water bath. A stainless steel stirrer rotating at 60 r.p.m. keeps the mass agitated during the 8-hour cooking period[2]. Water to replace evaporation loss is supplied from an inverted bottle through a tube, maintaining a constant level in the flask.

Drying, grinding and setting up the cooker is completed by 5 p.m. A routine tester on shift watches the apparatus occasionally to make sure that nothing goes wrong. After eight hours' cooking he stops the stirrer and shuts off the heat. The next morning the clay is filtered through filter paper by means of a Buechner funnel using vacuum. The filter cake is taken up in water and filtered again. This washing procedure is repeated three times. After this, enough water is added to the cake to make a pulp of convenient fluidity. A 5-gram sample is placed at once into a drying oven kept at 220° F. to determine the solid content of the pulp, which normally is close to 20 per cent. While the sample is drying, contacts are run with a standard pulp and with the two pulps obtained from the clay car. The per cent "p" of (dry) clay required to match a color obtained by a 10 per cent contact of (dry) standard clay, is determined. The efficiency is calculated as follows:

$$E = \frac{10}{p} \times 100$$

By 3 p.m. the day after arrival of the clay car the result of the test has been reported to the office. Orders are given immediately to pull the car into the plant yard, so that it can be unloaded early the following day. Colors are measured by means of the Tag-Robinson colorimeter, which instrument is most convenient for plant control work. Fresh standard pulps are prepared every two to three weeks from a large sample of raw clay set aside for this purpose. This frequent renewal of the "standard" has been made a rule, as we experienced slow changes in clays which were stored in solution, resulting in freakish results for the efficiency of clays tested against such "standard" clay.

[2]According to the original method the mass shall not be agitated. We have been unable to find out why. In our experience better checks and fewer freak results are obtained with stirring.

Distress Oil in Old Oklahoma Fields Has Been Provided Outlet

The committee of oil producers that have been working to find an outlet for all the oil produced in the northeastern part of Oklahoma, announces it has at last found pipe line connections for the remainder of the distress oil within these areas. Arrangements to handle the oil have been made on an exchange-per-barrel agreement with the different pipe line companies.

When the Prairie Oil & Gas Co. quit purchasing oil January 1, 1931, approximately 30,000 bbls. of oil was left without any pipe line connection. Other pipe line companies began to connect leases until all but 7,500 bbls. were provided for. Producers formed committees and the Lawson committee obtained connections for approximately 2,200 bbls. of distress oil in the Bird Creek, Alluwe and Nowata districts, leaving approximately 5,000 bbls. without connections.

Producers formed another committee with Winston P. Henry, as chairman, to work out relief for the remainder of the distress oil. The committee prepared a map showing all the gathering lines in the area and the leases with distress oil were located on the map. Attempts were made to interest pipe line companies nearest the leases. The National Refining Co., Barnsdall Oil Co., Johnson Oil & Refining Co., The Texas Company, Gypsy Oil Co., Stanolind Crude Oil Purchasing Co., Shell Petroleum Corp., Oklahoma Pipe Line Co., assisted the committee in the work of connecting the properties they could economically reach.

It was soon found that about 2,500 bbls. could not be handled through any other pipe lines than that of the Prairie Pipe Line Co. After conferences with the committee and the officials, the Prairie Pipe Line Co. agreed to handle distress leases as the committee directed, under contract, provided the Prairie Oil & Gas Co. was relieved of the same amount of oil by other pipe line companies, and to facilitate the work of the committee the Prairie agreed to lend its equipment.

The Prairie Oil & Gas Co. agreed to help relieve the situation by working with the Prairie Pipe Line Co., making trades with other pipe line companies under a year contract to exchange its own oil with the Gypsy Oil Co., Carter Oil Co., The Texas Company, Stanolind Crude Oil Purchasing Co., Shell Petroleum Corp., Barnsdall Oil Co., National Refining Co., and Johnson Oil & Refining Co. All of the properties listed with the committee were arranged for and connections are being made as rapidly as possible. The operators committee was composed of Winston P. Henry, R. Bruce Martin, Kirol Holm, J. B. Steel, T. R. McSpadden, H. G. Ellis and George Van Dall.

EAST CENTRAL TEXAS WILDCATS

(Continued from Page 49)

Cranfill & Reynolds' No. 1 G. L. Rembert Co., 150 ft. from N and 150 ft. from E of 166.5-ac. tract and 86-ac. tract, John Ruddle Sur. ..... Derrick.

Cranfill & Reynolds' No. 1 G. P. McGrede, 328 ft. from S and 250 ft. from W of 16-ac. lease, Dolores Sanches Sur. ..... Set 67 ft. of 12½-in. pipe.

Cranfill & Reynolds' No. 2 Blackman, 1,040 ft. E of S line of Blackman 40-ac. from SW cor. of same and thence 240 ft. N at right angles, W. P. Chisum Sur. ..... Rigging up.

Crump and Hanagan's No. 1 Dallas Caldwell, 150 ft. from S and N offset to East Texas' No. 1 Fisher, John Ruddle Sur. ..... Drlg. 3,505 ft.; oil sand 3,491 ft.

Danciger Oil & Refining Co.'s No. 1 C. C. Clemons, 150 ft. from E and 150 ft. from S of 28.5-ac. tract, Dolores Sanches Sur. ..... Rig up.

Davis and Russell's No. 1 M. E. Anderson, 150 ft. from E and 75 ft. from S of 3-ac. lease in Kilgore Townsite, Mary Van Winkle Sur. ..... Drlg. 1,595 ft.

Daisy Oil Co.'s No. 1 Mrs. H. B. Ware, 1,000 varas from N and 350 ft. from W of survey, Avery B. Johnson Sur. ..... Drlg. 2,010 ft.

Eslick and Little's No. 1 W. R. Nicholson, 1,205 ft. from E and 150 ft. from S of 1,094-ac. tract, Marsh Mann Sur. ..... Oil sand 3,659-65 ft.

E. A. Eslick et al's No. 2 Springhill Church, 150 ft. from E and 150 ft. from S of 15-ac. lease, W offset to Mid-Kansas, Dolores Sanches Sur. ..... Rig up.

D. H. Felder's No. 1 Elder (Trip), 200 ft. N and 200 ft. W of Elder tract, J. W. McCorry Sur. ..... Oil 3,702 ft. in lime.

Flannagan Prod. Co.'s No. 1 A. J. Green, 200 ft. from E and 150 ft. from S of 35-ac. tract, G. W. Hooper Sur ..... Set 69 ft. of 10-in. csg.

F. H. E. Oil Co.'s No. 1 Julia Flemister et al, 150 ft. from E and 150 ft. from S of 27.3-ac. tract, G. W. Hooper Sur. ..... Moving in material.

Flannery Oil Co.'s No. 1 W. H. York, 150 ft. from S and center E and W of 18½-ac. tract, William Carlton Sur. ..... Derrick.

Gibson and Adams' No. 1 Bill Collier, 150 ft. from S and 248 ft. from W of lease, Mary Van Winkle Sur. ..... Derrick.

M. S. Hammond's No. 1 J. M. Hamby, 278 ft. from E line, 1,667 ft. S of Hamby 3,800-ac. tract, Martin Lant Sur. ..... Reset 6⅝-in. csg.

Heep Oil Corp.'s No. 1 Barber, 800 ft. from N and 500 ft. from E of survey, William McCurry Sur. ..... Rerunning tubing; T. D. 3,553 ft.

Houston Oil Co.'s No. 1 J. G. McGrede, 150 ft. from E and 150 ft. from S of 100-ac. lease and W offset to Pilot Oil Co.'s No. 1 McGrede, Dolores Sanches Sur. ..... Shut down.

Humble Oil & Ref. Co.'s No. 1 J. A. Knowles, 4,150 ft. from W line and 4,150 ft. from S line of survey, Mary Van Winkle Sur. ..... Derrick.

Hudson and McCamey's No. 1 Smith, 150 ft. S and 150 ft. W of W. Smith 43-ac. tract, J. S. Carrithers Sur. ..... Rig up.

Hunter and Howe's No. 1 Watson, 175 ft. from S and 160 ft. from W of 92-ac. tract, Mary Van Winkle Sur. ..... Top Pecan Gap 2,600 ft.; T. D. 3,585 ft.

Hurburt and Brown's No. 1 L. L. Mackey, 990 ft. from E and 990 ft. from S of 269-ac. tract, 1,000 ft. from W and 990 ft. from S of survey, G. Y. Chambers Sur. ..... Shut down 500 ft.

Kimsey-Trimble's No. 1 Griffith Davis, 922 ft. E of N line of Griffin Davis 119.5-ac. tract from NW cor. of same and 145 ft. S at right angles, W. P. Chisum Sur. ..... Location.

Lloyd Oil Corp.'s No. 2 Andrews, 952 ft. from S line and 339 ft. from W line of S. G. Andrews tract, William Hyde Sur. ..... Derrick.

Leonard Pet. Co.'s No. 1 W. S. Pryor, 200 ft. from S and 300 ft. from W of 152-ac. tract, 2,600 ft. from E and 2,350 ft. from N of survey, Hamilton McNutt Sur. ..... Derrick.

Mazda Oil Co.'s No. 1 W. W. Cotton, 150 ft. out of SE cor. of 33-ac. tract, W. P. Chisum Sur. ..... Set 75 ft. 12½-in. surface csg.

Marlin Syndicate's No. 1 Springhill School, 1,780 ft. from S and 9,200 ft. from W of survey, Dolores Sanches Sur. ..... Shut down 2,610 ft.

McMillian Pet. Co.'s No. 1 George Fenton, 150 ft. from S and 150 ft. from W of 10 acres of 20-ac. tract, Dolores Sanches Sur. ..... Set 6⅝-in. csg. 3,578 ft.

George McCamey et al's No. 1 J. F. Richards, 150 ft. from N and 150 ft. from W of 50-ac. tract, Mary Van Winkle Sur. ..... Bailed dry; set 48 hours; 600 ft. oil in hole.

Meck and King's No. 1 Harmony Grove School, 270 ft. from S and 150 ft. from W of 3.7-ac. tract, Mowry Irwin Sur. ..... Derrick.

Mid-Kansas Oil & Gas Co.'s No. 1 E. M. Nettleton, 150 ft. from S and N offset to Republic's No. 1 Fisher, John Ruddle Sur. ..... Rig up.

Mid-Kansas Oil & Gas Co.'s No. 1 J. J. Castleberry, 150 ft. from S and 150 ft. from W of most southerly SW cor. tract, Dolores Sanches Sur. ..... Shut down 1,250 ft.

Mid-Kansas Oil & Gas Co.'s No. 1 Burton, 150 ft. from N and 150 ft. from W of 193.9-ac. tract and survey, Hollingsworth Sur. ..... Set 315 ft. of 10-in. csg.

Harry Moss et al's No. 1 G. B. Tenery, 150 ft. from S and 151 ft. from W of 40-ac. tract and 10-ac. lease, William Robinson Sur. ..... Set 6⅝-in. at 3,550 ft.

Oriental Oil Co.'s No. 1 F. Johnson, 808 ft. from N and 530 ft. E of the NW cor. of Humble, J. A Knowles 100-ac. tract, Mary Van Winkle Sur. ..... Set 6⅝-in. csg.; T. D. 3,542 ft.

John W. Olvey et al's No. 1 Ben Rodden, 187 ft. from N and 187 ft. from E of 10-ac. lease, William Robinson Sur. ..... Derrick.

Pace et al's No. 1 C. Harrell estate, 300 ft. from E line and 150 ft. from N line of 150-ac. tract, A. M. Coleman Sur. ..... Derrick.

Phares and Sample's No. 1 Maude Smith, 4,800 ft. from W and 1,400 ft. from N of survey, Isaac Skillern Sur. ..... Derrick.

Phillips et al's No. 1 M. T. Cole, 200 ft. out of SW cor. of M. T. Cole 320-ac. tract, Judson Meador Sur. ..... Preparing to spud.

Pilot Oil Co.'s No. 1 G. E. McGrede, 150 ft. from S and 150 ft. from W of 36-ac. tract, Dolores Sanches Sur. ..... Top sand 3,600-78 ft.

Republic Prod. Co.'s No. 1 Fisher (Rodden), 200 ft. from N and 200 ft. from E of 50 acres of 198-ac. tract, John Ruddle Sur. ..... Set 6⅝-in. csg.; T. D. 3,449 ft.

Roeser and Pendleton's No. 1 J. R. Fenton, 200 ft. from S and center of E and W of 17-ac. lease, Dolores Sanches Sur. ..... Location.

Roy Roberts et al's No. 1 L. M. Colburn, 150 ft. from E and 150 ft. from S of 45-ac. lease, 5,700 ft. from E and 850 ft. from N of survey, Henry Hathaway Sur. ..... Derrick.

Rush Bros.' No. 1 W. M. Harley, 150 ft. from NE and 150 ft. from SE of 10-ac. lease, William Robinson Sur. ..... Derrick.

C. Rosenfield et al's No. 1 J. A. Knowles, 700 ft. from E, 1,250 ft. from N, William Lyles Sur. ..... Drlg. 2,050 ft.
Shell Petroleum Corp.'s No. 1 J. A. Knowles, 556 ft. from S line and 339 ft. from E line of 65-ac. lease, Allen Moore Sur. ..... Location.
Smith et al's No. 1 J. B. Doby, 982 ft. from E and 150 ft. from S of 170-ac. tract, William H. Castleberry Sur. ..... Derrick.
Simms Oil Co.'s No. 1 W. M. Harley, 150 ft. NE and 150 ft. from SE of 10-ac. lease, William Robinson Sur. ..... Drlg. 2,510 ft.
Sinclair Oil & Gas Co.'s No. 1 M. T. Cole, 2,640 ft. from N and 2,742.2 ft. from W line of survey, Samuel Brooks Sur. ..... Derrick.
Skipper and Lacey's No. 1 Mrs. Maggie Magrill, 370 ft. from N and 850 ft. from W of 17.7-ac. lease and 47-ac. tract, Dolores Sanches Sur. ..... Set 6⅝-in. csg.; T. D. 3,652 ft.
B. A. Skipper Oil Co.'s No. 1 Thad Snoddy, 150 ft. from N and 1,368 ft. from E of survey, W. H. Castleberry Sur. ..... Set 6⅝-in. csg.; T. D. 3,592 ft.
Smith Ref. Co.'s No. 1 J. A. Knowles, 150 ft. from S, 150 ft. from NW of 75-ac. tract, 5,200 ft. from W, 7,700 ft. from N, Mary Van Winkle Sur. ..... Derrick.
Sun Oil Co.'s No. 2 J. R. Beal, 192 ft. from N and 250 ft. from E line of lease, W. P. Chisum Sur. ..... Location.
Sultan-Daniels et al's No. 1 Springhill School, 420 ft. from E and 980 ft. from S of 15-ac. tract, Dolores Sanches Sur. ..... Set 6⅝-in. csg.; T. D. 3,578 ft.
Sutton et al's No. 1 McNeely, 150 ft. from N and 150 ft. from E of 7.73-ac. tract, W. P. Chisum Sur. .... Rig up.
Tidal Oil Co.'s No. 1 Bean heirs, 250 ft. from W and 200 ft. S of railroad in 70-ac. tract, J. S. Carrithers Sur. ..... Set 12½-in. csg. at 243 ft.
Paul Vitek et al's No. 1 Louise Osborne, 150 ft. from E, 150 ft. from S and W 46 acres of 84-ac. tract, 2,000 ft. from W, 450 ft. from S, R. R. Bobbett Sur. ..... Shut down 1,130 ft.
James A. Weir Drlg. Co.'s No. 1 J. G. McGrede, 298 ft. from E and 155 ft. from S of Lot No. 3, Dolores Sanches Sur. ..... Rig up.
Werbey and McMinn's No. 1 Solon King, 1,400 ft. from E and 3,300 ft. from S of survey, W. P. Chisum Sur. ..... Reaming to set csg.; T. D. 3,595 ft.
Wise and Jackson's No. 1 F. J. Glover, 350 ft. from N and 125 ft. from E line of survey, George Melton Sur. ..... Derrick.
Woodlett et al's No. 1 W. M. Harley, 150 ft. from NE and 150 ft. from SE of 10-ac. tract, William Robinson Sur. ..... Set 6⅝-in. csg. 3,501 ft.
Pat White et al's No. 1 S. I. Jones, 1,170 ft. from N and 150 ft. from W of 108-ac. tract, P. P. Rains Sur. ..... Rig up.
Whitney-Cowanaugh's No. 1 Ben Watson, 300 ft. E of Marine Oil Co.'s No. 1 Art Mitchell, J. S. Cathers Sur. ..... Derrick.
Yount Lee Oil Co.'s No. 1-B R. S. McKinley, 1,993 ft. from S and 2,440 ft. W of NE cor. of 212-ac. tract, William Robinson Sur. ..... Derrick pattern.
Yount Lee Oil Co.'s No. 1-B F. K. Lathrop, 300 ft. N and E of SE cor. of J. C. Davis tract, William Robinson Sur. ..... Set 7⅝-in. csg. 3,560 ft.
Yount Lee Oil Co.'s No. 2-B F. K. Lathrop, 189 ft. W and 300 ft. N of NW cor. of G. B. Tenery 40-ac. tract, William Robinson Sur. ..... Set 7⅝-in. csg. 3,592 ft.

LAMAR COUNTY

K. O. Bundy et al's No. 1 La Gatle, 200 ft. from N and 500 ft. from E of La Gatle tract, John V. Cherry Sur. ..... Moving in rig.
Everett & Allen's No. 1 Guest, 250 ft. S and 2,046 ft. E of 100-ac. tract, L. Roberts Sur. .. .. Drlg. 2,072 ft.

NACOGDOCHES COUNTY

Fuhram et al's No. 1 Robert Mattaner, NW cor. of 520-ac. tract, J. A. Cherino grant ..... Derrick.
J. C. McNeil et al's No. 1 Hayter estate, 1,000 ft. E of Laco Creek and 300 ft. S of Nacogdoches and Jacksonville Highway De Las Santos-Coy Sur. ..... Location.

RAINS COUNTY

Berry and Hale's No. 1 Ownsby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. ..... Derrick.
Westbrook Oil Co.'s No. 1 William Cates, 150 ft. N and W of NW cor. of E. S. Knight 46-ac. tract and on Cates 266-ac. tract, Calvin Gage Sur. ..... Shut down 3,045 ft.

RED RIVER COUNTY

Everett & Allen's No. 1 Bryan, 1,200 ft. SW of NE cor. of Bryan 130 acres, P. Vaughn Sur. ..... Moving in rig.
Everett & Allen's No. 1 E. Howison, 225 ft. S, 185 ft. W of 79-ac. tract, William Humphreys Sur. ..... Rig up.
Droppleman and Bunely's No. 1 J. W. Cunningham, 250 ft. E and 250 ft. S of 180-ac. tract, S. B. Shi Sur. ..... Shut down 2,747 ft.
Pearsons et al's No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. ..... Spudded and shut down.

KILGORE AREA—RUSK COUNTY

Abercrombie's No. 1 E. Cantrell, 740 ft. from W line of Cantrell 53-ac. tract in Robert W. Smith Sur., and 148 ft. from S line ..... Building derrick.
Beard and Hammond's No. 1 J. S. Bean, 233 ft. from N and 150 ft. from W of S 10 acres of 20-ac. tract, J. Lewis Sur. ..... Drlg. plug.
British-American Oil Co.'s No. 2 Emma Thompson, 150 ft. out of SW cor. of the 25-ac. lease, Robert E. Winn Sur. ..... Drlg. 2,810 ft.
Burton Drlg. Co.'s No. 2 E. B. S. Florey, 900 ft. from N line and 115 ft. from E line of 50-ac. tract, Peter Holmes Sur. ..... Drlg. 3,350 ft.
Burton Drlg. Co.'s No. 3 E. B. S. Florey, 250 ft. out of NE cor. of Burton Florey 50-ac. lease, Peter Holmes Sur. ..... Location.
Cordova Union Oil Co.'s No. 2 C. O. Christian, 150 ft. from E and 150 ft. from S of lease and tract, Robert E. Winn Sur. ..... Drlg. 3,650 ft.
Cordova Union Oil Co.'s No. 4 C. O. Christian, 750 ft. from S and 150 ft. from W of lease and tract, Robert E. Winn Sur. ..... Top sand 3,658 ft.
Cordova Union Oil Co.'s No. 5 C. O. Christian, 2,100 ft. from W and 1,700 ft. from N of survey, Robert E. Winn Sur. ..... Drlg. 2,630 ft.
Cox and Hamon's No. 3 D. M. Peterson, 150 ft. from N and W lines of 40-ac. tract, Isaac Ruddle Sur. ... Moving in material.
Cranfill & Reynolds' No. 1 George Thompson, 2,150 ft. from W and 2,100 ft. from N line of survey, Robert E. Winn Sur. ..... Initial prod. 78 bbls. first 30 minutes open.
Cromwell et al's No. 1 C. J. Bradberry, 565 ft. from S line of Bradberry 112-ac. tract and 154 ft. from E line of Robert W. Smith Sur. ..... Derrick.
Curtis and Lee's No. 1 J. S. Bean, 1,650 ft. from S, 200 ft. E of NW cor. of 314-ac. tract and lease, 4,925 ft. from S, 1,075 ft. from W. J. Lewis Sur. .. Shut down 2,000 ft.
Danciger Oil & Refining Co.'s No. 1 Carlos Bean, 150 ft. from W and 300 ft. from S line of lease, Isaac Ruddle Sur. ..... Drlg. 3,602 ft.
East Texas Refining Co.'s No. 1 Wills, 723 ft. from N and 250 ft. from S, 150 ft. from W of 83.24-ac. lease, W. P. Chisum Sur. ..... Drlg. 3,515 ft.
East Texas Refining Co.'s No. 2 Wills, 200 ft. from N and 150 ft. from E of 80-ac. lease, W. P. Chisum Sur. ..... Drlg. 2,857 ft.
Harry Elliott's No. 1 Carroll, 175 ft. from N and 200 ft. from E of 7-ac. tract, W. R. Cook Sur. ..... Location.
H. W. Elliott's No. 1 Ferrell, 150 ft. from N and 150 ft. from E of 8-ac. tract, W. M. Ryan Sur. ..... Drlg. 2,900 ft.
Elsy Drlg. Co.'s No. 1 George Thompson, 150 ft. from N, 150 ft. from E of tract of 70 acres and 10-ac. lease, 400 ft. S, 500 ft. W, Henry Dobson Sur. ..... Spudded and shut down.
Gulf Production Co. and Devonian's No. 1 W. L. Laird, 150 ft. from E and 150 ft. from S of 60-ac. tract, Isaac Ruddle Sur. ..... Top sand 3,601 ft.; T. D. 3,609 ft.
Gulf Production Co.'s No. 2 Brightwell, 330 ft. out of NE cor. of lease, Robert E. Winn Sur. ..... Rig up.
Hick's No. 2 J. N. Peterson, 150 ft. from NE and NW lines of the N cor. of lease, Isaac Ruddle Sur. .... Derrick.
Hill and Brown's No. 1 J. N. Peterson, 150 ft. from N and E of the S 41.56-ac. tract of the 56.25-ac. tract, Isaac Ruddle Sur. ..... Drlg. 2,500 ft.
Horseshoe Syndicate's No. 1 W. P. Brightwell, 150 ft. from N line and 150 ft. from W line of tract, Robert E. Winn Sur. ..... Set 6⅝-in. csg.; T. D. 3,710 ft.
Houston Production Co.'s No. 1 W. R. Brightwell, 984 ft. N and 287 ft. W of NW cor. of W. Brock heirs 595-ac. tract, E. G. Sevier Sur. ..... Location.
Houston Oil Co.'s No. 1 Dora Wells, 150 ft. out of NE cor. of 25-ac. lease, Henry Hobson Sur. ..... Location.
Houston Oil Co.'s No. 1 S. S. Laird, 150 ft. from N line and 150 ft. from W line of tract, Isaac Ruddle Sur. ..... Set 6⅝-in. csg.; T. D. 3,640 ft.
Houston Oil Co.'s No. 1 Brightwell, 150 ft. from N and 150 ft. from E lines of tract, Robert E. Winn Sur. ..... Drlg. 2,916 ft.
Houston Oil Co.'s No. 2 L. D. Crim, 150 ft. from N line and 300 ft. from E line of tract, Henry Hobson Sur. ..... T. D. 3,767 ft.; initial prod. 2,782 bbls. first 24 hrs.; pinched; top sand 3,706 ft.
Humble Oil & Ref. Co.'s No. 1 R. H. Laird, 150 ft. from N and 200 ft. from E line of 40-ac. lease, Isaac Ruddle Sur. ..... Building derrick.
Humble Oil & Refining Co.'s No. 3 Peterson, 120 ft. from E and 120 ft. from W, being 740 ft. N and 29° W of Peterson No. 1-B, 12-ac. tract, Isaac Ruddle Sur. ..... Derrick.
M. W. Hunter's No. 2 Buntyn, 600 ft. E of S line of E. Cantrell 53-ac. tract from SW cor. of same and 142 ft. south at right angles, J. C. Snow Sur. ..... Spudding.
E. M. Jones' No. 1 Wells, 248 ft. from N and 150 ft. from W of 41.6-ac. lease, W. P. Chisum Sur. ..... Rig up.
Killum and Reed's No. 1 Lou Emma Price, 150 ft. from N and 550 ft. from E line of the W. Brock heirs 59.5-ac. tract, William Chisum Sur. ..... Drlg. 3,423 ft.
Killerman and Hind's No. 1 Brock heirs, 460 ft. S and 150 ft. W of the NW cor. of the Houston Oil Co.'s 20-ac. Brightwell lease, Robert W. Smith Sur. ..... Location.
Captain Lucey's No. 1 Maxwell, 600 ft. N and 200 ft. W of SW cor. of John Darley Sur. in the E. Collard Sur. ..... Rig up.
Magnolia Pet. Co.'s No. 1 Florey, 150 ft. from N and E lines of tract, Peter Holmes Sur. ..... Pulled tubing; T. D. 3,668 ft.
Magnolia Petroleum Co.'s No. 1 C. C. Still, 150 ft. from N and E lines of 100-ac. tract, Meredith McCabe Sur. ..... Set 13⅜-in. csg.; T. D. 121 ft.
Marine Oil Co.'s No. 2 Nat Beason, 150 ft. from W line and 150 ft. from N line of tract, Isaac Ruddle Sur. ..... Top sand 3,590 ft.; T. D. 3,645 ft.
McMan Oil & Gas Co.'s No. 1 S. S. Laird, 300 ft. out of SE cor. of 11.45-ac. lease, Robert W. Smith Sur.. Drlg. 2,800 ft.
McMan Oil Co.'s No. 1 Mrs. Sam B. Wills, 171 ft. from S line and 290 ft. from W line of the N 112-ac. tract, William Chisum Sur. ..... Drlg. 2,905 ft.; top Pecan Gap 2,580 ft.
Charles L. McMahon's No. 1 Wills, 150 ft. from E and 175 ft. from S of 52-ac. tract, W. P. Chisum Sur. .... Set 6⅝-in. csg.; T. D. 3,661 ft.
Moser's No. 1 Buntyn, 554 ft. from N and 325 ft. from E of survey, the most northeasterly cor. of survey, J. C. Snow Sur. ..... Derrick.
Moody-Seagraves' No. 1 Thompson, 150 ft. from N and center E and W of 10-ac. lease, Robert E. Winn Sur. ..... Top sand 3,697 ft.; T. D. 3,776 ft.
Moody-Seagraves' No. 1 J. H. Palmer, 150 ft. out of NE cor. of lease, S offset to Markham and Dunning's No. 3 or 5-E Peterson, Robert E. Winn Sur. .. Derrick.
Moorefield's No. 1 Jessie Ector, 492 ft. from the N line and 650 ft. from W line of 100-ac. tract, Daniel Clark Sur. ..... Cored lime 3,640-50 ft.
H. v. Oliver and Brown Drlg. Co.'s No. 1 B. F. Hindman, 150 ft. from N, 150 ft. from E of 5-ac. tract, 850 ft. from E, 3,150 ft. from N, Robert Smith Sur. .. Coring 3,700 ft.
J. S. Rushing's No. 1 Thompson, 150 ft. from N line and 219 ft. from W line of lease, Robert E. Winn Sur. ..... Drlg. plug.
Shell Pet. Corp.'s No. 1 Wills, 200 ft. from N and 200 ft. from W of 182-ac. tract, W. P. Chisum Sur. ..... Set 6⅝-in. csg.; T. D. 3,661 ft.
Smith and Gulf Prod. Co.'s No. 2 D. M. Peterson, 150 ft. from S and 150 ft. from E lines of 92.08-ac. tract, Isaac Ruddle Sur. ..... Drlg. 3,688 ft.
Snowden and McSweeney's No. 1 Ben Laird, 170 ft. from E and 100 ft. from S lines of 143-ac. tract, Isaac Ruddle Sur. ..... Base sand 3,679 ft.; T. D. 3,687 ft.
Snowden and McSweeney's No. 2 Ben Laird, 150 ft. from E and 150 ft. from N of 143-ac. tract, Isaac Ruddle Sur. ..... T. D. 3,642 ft.; preparing to tube.
Sun Oil Co.'s No. 1 Ed Barker, 200 ft. from E and 200 ft. from S of 77-ac. lease, A. M. Ryan Sur. .... Drlg. 2,015 ft.
Sun Oil Co.'s No. 1 Beal, 200 ft. from W and 200 ft. from S of Beal 180-ac. tract, W. P. Chisum Sur. ... Drlg. 2,016 ft.
Sun Oil Co.'s No. 1 A. A. King, 225 ft. out of SE cor. of A. A. King 100-ac. lease, Peter Holmes Sur. ..... Location.
Sun Oil Co.'s No. 1 W. D. Tucker, 1,475 ft. N and 150 ft. from E line of W. D. Tucker 306.53-ac. lease, Peter Holmes Sur. ..... Location.
Stanolind Oil & Gas Co.'s No. 2 W. R. Terrell, 431 ft. from N and 393 ft. from E line of lease, E. G. Sevier Sur. ..... Derrick.
Stanolind Oil & Gas Co.'s No. 1 W. R. Terrell, 327 ft. S and 275 ft. from W of 50-ac. lease, E. G. Sevier Sur. ..... Drlg. 2,920 ft.
Turman Oil Co.'s No. 1 Brightwell, 150 ft. from the N and E lines of 30-ac. lease, Robert E. Winn Sur. ..... Top sand 3,605 ft.; T. D. 3,630 ft.
Turman Oil Co.'s No. 2 W. P. Brightwell, 150 ft. out of NW cor. of 30-ac. lease, Robert E. Winn Sur. ..... Drlg. 2,820 ft.
W. D. Walton's No. 1 Brightwell, 150 ft. from N and E lines of the S 20 acres of W 50 acres of Brightwell 100-ac. tract, Robert E. Winn Sur. ..... Derrick burned.
Ward et al's No. 1 H. P. Leverett, 150 ft. out of the NW cor. of the 38-ac. tract, Meredith McCabe Sur. .. Drlg. 3,550 ft.
Weaver-Crim Corp.'s No. 1 Dave Ladd, 150 ft. from the S and W lines of tract, N offset to Woodley's No. 1 Ladd, Henry Hobson Sur. ..... Drlg. 2,395 ft.
Woodley Pet. Corp.'s No. 1 George Thompson, 150 ft. from N line and center of E and W lines of Woodley 10-ac. lease of George Thompson 70-ac. tract, Robert E. Winn Sur. ..... Rig up.
Woodley Pet. Corp.'s No. 2 D. M. Peterson, 150 ft. from S line and 150 ft. from W line of 20-ac. tract, Isaac Ruddle Sur. ..... Top sand 3,652 ft.; T. D. 3,690 ft.
Woodley's No. 1 Dave Ladd, center of 2½-ac. tract, Henry Hobson Sur. ..... Top sand 3,652 ft.; T. D. 3,704 ft.

JOINER POOL—RUSK COUNTY

Alford et al's No. 1 W. L. Thrash, 1,103 ft. from N, 420 ft. from E of SE cor., B. Smith Sur. ..... Derrick.
Anderson's No. 1 Giles, 1,900 ft. from E and 4,600 ft. from N of survey, M. J. Prue Sur. ..... Drlg. 3,604 ft.
Armstrong and Pitt's No. 1 Cooper, 2,150 ft. from W and 166 ft. from N of survey ..... Rig up.
Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ..... Derrick.
Bahan's No. 1 W. M. Camp, 180 ft. from N, 150 ft. from W of 25-ac. tract, Juan Ximenes Sur. ..... Cleaning out 3,650 ft.
Big Indian Oil Co.'s No. 1 Deason, 360 ft. from E and 4,100 ft. from S of survey, M. J. Prue Sur. ..... Fishing 3,073 ft.
Berry-Lewis' No. 1 Thompson, 291 ft. from N and 2,955 ft. from W of M. L. Thompson 129 acres, M. J. Prue Sur. ..... Location.
Consolidated Oil Co.'s No. 3 Jobe, 4,500 ft. from W and 3,160 ft. from N of survey, Juan Ximenes Sur. ..... T. D. 3,685 ft.
Consolidated Oil Co.'s No. 4 Jobe, 5,025 ft. from W and 3,160 ft. from N of survey, Juan Ximenes Sur. ..... Swabbed dry through csg.
E. L. Chapman's No. 1 A. P. Finney, 150 ft. from W of E 20 acres of 102-ac. tract, Isaac G. Parker Sur. .... Drlg. 3,200 ft.
Cranfill & Reynolds' No. 1 Cox, 2,100 ft. from E and 1,500 ft. from S of survey, R. H. Pinney Sur. ..... Derrick.
Dan Brooks, trustee's No. 1 Alford, 1,000 ft. from E and 200 ft. from S of Alford 100-ac. tract, J. R. Reel Sur. ..... Drlg. 3,455 ft.
Dan Dillon et al's No. 1 W. H. Frederick (Jake), 150 ft. from E, 150 ft. from S of 60-ac. tract, Juan Ximenes Sur. ..... Derrick.
Danciger's No. 1 Deason, 3,925 ft. from S and 650 ft. from W of survey, Juan Ximenes Sur. ..... Spudding.
Elliott's No. 1 Alford, 445 ft. N and 194 ft. W of most westerly SW cor. of J. P. Maxwell 144-ac. tract, I. G. Parker Sur. ..... Rig up.
Elsy and Tauteaham's No. 1 Deason, 1,300 ft. from W and 3,700 ft. from S of survey, Juan Ximenes Sur. Set 10 in. csg. 180 ft.
Elsy Drlg. Co.'s No. 1 Frederick, 150 ft. from S and 603 ft. from W of Frederick 90-ac. tract, Juan Ximenes Sur. ..... Location.
East Texas Oil Co.'s No. 1 C. D. Ashby, 856 ft. N, 1,774 ft. from W of Ashby 119-ac. tract, Juan Ximenes Sur. ..... Shut down 2,160 ft.
Fitzsimmon's No. 1 Alford, 428 ft. from S and 4,500 ft. from W of survey, I. G. Parker Sur. ..... Sand 3,599-3,608-18-19 ft.; T. D. 3,628 ft.
Greely and Baker's No. 1 Thrash, 2,600 ft. from W and 1,850 ft. from N of survey, Juan Ximenes Sur. ..... Drlg. 2,200 ft.
Griffith's No. 1 J. F. Lowe, 800 varas E of W line and 200 varas S of N line of 268-ac. tract, William Williams Sur. ..... Shut down 3,106 ft.
Gulf Production Co.'s No. 1 Cash, 6,600 ft. from S and 3,800 ft. from E of survey, F. Cordova Sur. ..... Location.
Haynes et al's No. 1 T. R. M. Lee, 3,300 ft. from W and 5,000 ft. from S of survey, M. J. Prue Sur. ..... Set 10-in. csg.; T. D. 58 ft.
John W. Hoosier's No. 1 L. Taliaferro, 1,250 ft. from W and 3,250 ft. from N of survey, Juan Ximenes Sur. ..... Drlg. 3,150 ft.
Humble Oil & Refining Co.'s No. 1 Kangerga, 3,100 ft. from E line and 4,600 ft. from N line of survey, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,697 ft.
Humble Oil & Ref. Co.'s No. 1 M. L. Thompson, 6,150 ft. from E and 1,850 ft. from N of survey, M. J. Prue Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 1 Plowman, 163 ft. from S and 1,074 ft. E of NW cor. of M. L. Thompson 129.6-ac. tract, F. Cordova Sur. ..... Building derrick.
H. L. Hunt's No. 1 Fair, 150 ft. from N and 180 ft. from W of Fair tract, Richard McAlnulty Sur. .... Drlg. 1,700 ft.
Kimbrough et al's No. 1 Weatherby, 300 ft. from N and 300 ft. from E, Robert Martin Sur. ..... Drlg. 200 ft.
Lide et al's No. 1 Deason, 2,200 ft. from E and 1,250 ft. from S of survey, M. J. Prue Sur. ..... Spudding.
E. C. Laster's No. 1 Daisy Bradford, 150 ft. from E. 150 ft. from S of Lot 14, Juan Ximenes Sur. ..... Location.
Laster et al's No. 1 Maxwell, 3,000 ft. from E and 623 ft. from N of survey, I. G. Parker Sur. ..... Drlg. 3,475 ft.
Peter Lively et al's No. 1 Cox, 200 ft. N and 155 ft. W of SW cor. of T. L. Moore Sur., R. H. Pinney Sur. ..... Drlg. plug 3,765 ft.
Luling Oil & Gas Co.'s No. 1 Frederick, 4,300 ft. from W and 1,425 ft. from N of survey, Juan Ximenes Sur. ..... Set 6-in. csg.; T. D. 3,741 ft.
Madden et al's No. 1 Mose Mayfield, 960 ft. from the S and 160 ft. from W line of 154-ac. lease, Daniel Clark Sur. ..... Waiting on csg.; T. D. 3,708 ft.
Mass and Tucker's No. 1 Matthews, 3,244 ft. from N, 4,356 ft. from E, Dalines Cartimas Sur. ..... Shut down 2,900 ft.
Merrick Oil Co.'s (Gibson & Johnson) No. 1 Ashby, 125 ft. from E, 125 ft. from S of Ashby 45-ac. tract, Juan Ximenes Sur. ..... Recementing crooked hole; T. D. 3,725 ft.
Merritt et al's No. 1 Cooper, 155 ft. from E and 170 ft. from S of most easterly SE cor. of T. J. Moore Sur. ..... Top Georgetown lime 3,668-82 ft.; drill stem test 20 fourbles oil and mud; T. D. 3,682 ft.
Moss and Urschel's No. 1 Deason, 1,224 ft. S and 140 ft. E of NE cor. of Robert Dark 50 acres, M. J. Prue Sur. ..... Set 6-in. csg.; T. D. 3,684 ft.
Moss and Urschel's No. 2 Mayfield-Alford, 211 ft. from S and 790 ft. from W of lease, Juan Ximenes Sur. ... Top Georgetown lime 3,747-50 ft.; preparing to swab.
John Mabee's No. 1 W. P. Brett, 1,150 ft. from E and 2,200 ft. from N of survey, M. J. Prue Sur. ..... Rig up.
G. B. Mitchell et al's No. 1 Ras Pool, 2,700 ft. from E and 4,275 ft. from N of survey, M. J. Prue Sur. .... Derrick.
J. R. McMurray's No. 1 Blackwell, 355 ft. from S and 159 ft. from W of Blackwell 93-ac. tract, M. J. Prue Sur. ..... Moving in rig.
National Drlg. Co.'s No. 1 Young, 585 ft. N and 138 ft. W of NW cor. of Lide-Rowe's 30-ac. lease, M. J. Prue Sur. ..... Derrick.
Nat Saddler's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ..... Set 8-in. csg.; T. D. 1,267 ft.
Olsen Bros.' No. 1 W. P. Brett, 2,350 ft. from E and 975 ft. from N of survey, M. J. Prue Sur. ..... Derrick.
Olsen Bros.' No. 3 Brown, 340 ft. S along W line of T. J. Brown 76-ac. from NW cor. of same and 200 ft. E at right angles to W line of M. J. Prue Sur. ..... Run tubing; T. D. 3,775 ft.
Pace et al's No. 1 Deason, 730 ft. from N and 152 ft. from W of Deason East 52-ac. tract, M. J. Prue Sur. ..... Derrick.
Pilot Oil Co.'s No. 1 J. E. Thrash, 205 ft. from N and 650 ft. from E of 62-ac. tract, F. Cordova Sur. .... Derrick.
G. Pollard's No. 1 Young, 586 ft. S and 182 ft. W of NW cor. of Lide 30-ac. lease, M. J. Prue Sur. ..... Set 231 ft. 10-in. csg.
Pharis and Sample's No. 1 Deason, 1,558 ft. E and 155 ft. S of SE cor. of H. Brooks tract in M. J. Prue Sur. ..... Drlg. 1,994 ft.
Petroleum Marketing Co.'s No. 1 Arnold, 350 ft. from E and 2,100 ft. from S of survey, M. J. Prue Sur. .. Set 6-in. csg.; T. D. 3,672 ft.
Phillips Petroleum Co.'s No. 1 Alford, 3,700 ft. from W and 60 ft. from S of survey, I. G. Parker Sur. .... Preparing to run liner; T. D. 3,608 ft.
Phillips Petroleum Co.'s No. 1 Wilson, 142 ft. from E and 135 ft. from S of Phillips 51-ac. tract, M. J. Prue Sur. ..... Set 150 ft. of 10-in. csg.
Pioneer's (Moody-Seagraves) No. 1 Deason, 2,050 ft. from E and 1,525 ft. from S of survey, M. J. Prue Sur. ..... Set 6-in. csg. 3,627 ft.; sand 3,658-66 ft.
Pioneer Oil Co.'s No. 2 Thrash, 1,275 ft. N along E line of A. Thrash 71-ac. tract from SE cor. of same and 485 ft. W at right angles to E line, M. J. Prue Sur. ..... Derrick.
Pioneer Oil Co.'s No. 4 Thrash, 1,900 ft. from E and 4,725 ft. from S of survey, M. J. Prue Sur. ..... Location.
George Ray et al's No. 1 Thompson, 6,200 ft. from E and 1,600 ft. from N of survey, M. J. Prue Sur. .... Derrick.
W. G. Ray Drlg. Co.'s No. 1 Wilson, 335 ft. from S and 240 ft. from W of lease, Richard McAlnulty Sur. ..... Spudding.
Rowe et al's No. 1 Maxwell, 555 ft. from E and 237 ft. from S of B. F. Maxwell 59-ac. tract, R. H. Pinney Sur. ..... Derrick.
Robertson Drlg. Co.'s No. 1 Deason, 3,400 ft. from S and 1,800 ft. from W of survey, Juan Ximenes Sur. .... Drlg. 3,350 ft.
Roeser and Pendleton's No. 1 Glenn Pool, 1,170 ft. from N and 200 ft. from E of 31-ac. lease, M. J. Prue Sur. ..... Spudding.
Rusk County Oil Co.'s No. 1 Robertson, 150 ft. from N along W line of George Guthrie Sur. from SE cor., 150 ft. W of E line of Robertson 25-ac. tract, R. H. Pinney Sur. ..... Shut down 1,363 ft.
J. Rusk et al's No. 1 W. B. Thompson, 150 ft. out of SW cor. of 59-ac. Thompson tract, John Dougherty Sur. ..... Drlg. plug.
Stokes et al's No. 1 Mrs. M. M. Talley, 4,100 ft. from W and 1,050 ft. from N of survey ..... Moving in rig.
Sun Oil Co.'s No. 1 S. A. Selman, 150 ft. from N and 150 ft. from E of 50-ac. tract, M. J. Prue Sur. .... Set 6-in. 3,660 ft.; T. D. 3,680 ft.
Shaw Oil Co.'s No. 1 Ras Pool, 1,630 ft. from N and 153 ft. from E of Pool tract, M. J. Prue Sur. ..... Rig up.
Shaw Oil Co.'s No. 1 Taliaferro, 150 ft. from S and 643 ft. from W of Taliaferro 52-ac. tract, Juan Ximenes Sur. ..... Derrick.
Sinclair Oil & Gas Co.'s No. 1 Wilson, 335 ft. from N and 354 ft. from E of lease, Richard McAlnulty Sur. ..... Location.
Suttle's No. 2 Holland, 156 ft. from N and 152 ft. from W of Holland 41.7-ac. tract, M. J. Prue Sur. ..... Derrick.
Turman and Swift's No. 1 S. E. Sanders, 712 ft. S and 164 ft. E of NW cor. of 55.1-ac. tract, T. J. Martin Sur. ..... Rig up.
Vitek's No. 1 Jobe, 3,950 ft. from W and 3,260 ft. from N of survey, Juan Ximenes Sur. ..... Rig up.
Ward Oil Co.'s No. 1 Finney, 163 ft. from E and 150 ft. from S of survey, F. Cordova Sur. ..... Drlg. 910 ft.
Ward Oil Co.'s No. 1 Cox, 1,700 ft. from W and 1,450 ft. from N of survey, R. H. Pinney Sur. ..... Set 6-in. csg.; T. D. 3,732 ft.
Williams and Dunning's No. 1 Young, 4,400 ft. from E and 2,450 ft. from S of survey, M. J. Prue Sur. .. Set 6-in. csg.; T. D. 3,638 ft.

SMITH COUNTY

Big Indian Oil Co.'s No. 1 Mills, 1,045 ft. E along S line of C. Mills 67.8-ac. farm, SW cor. of same and 710 ft. N at right angles to S line of 67.7 acres, J. Jordan Sur. ..... Drlg. 2,205 ft.
G. B. Bunte, trustee's No. 1 A. S. Jarvis, 150 ft. from S and 150 ft. from W of 267-ac. tract, Juan Vargus Sur. ..... Rig up.
East Texas Ref. Co.'s No. 1 Tyiska, 200 ft. from E and 200 ft. from S of survey, R. Wilson Sur. ..... Rig up.
Howard Petroleum Co.'s No. 1 Lee Holt estate, 5,000 ft. from N and 1,000 ft. from S of survey, Barnes Clark Sur. ..... Drlg. 2,900 ft.
Joiner et al's No. 1 W. W. Wright, 847.5 varas from E and 647 varas from S of NW Wright 225-ac. tract, Van Sickle Sur. ..... Drlg. 2,875 ft.
Guy Lewis' No. 1 A. Wright, 125 ft. from N and 150 ft. from E of R. Wright 100-ac. tract, Maria Gertruds Sur. ..... Rig up.
Sinclair Oil & Gas Co.'s No. 1 Armond Wiley, 1,163 ft. from N and 3,140 ft. from W of 312.11-ac. lease, James Jordan Sur. ..... Derrick.
Sinclair Oil & Gas Co.'s No. 1 Mayfield, 2,194 ft. from N and 3,625 ft. from W of 376-ac. Mayfield lease, James Jordan Sur. ..... Derrick.
Sinclair Oil & Gas Co.'s No. 2 Mayfield, 855 varas from N and 758 varas from W of Mayfield 376.4-ac. tract, James Jordan Sur. ..... Spudding.
The Texas Company's No. 1 Blackwell, 330 ft. from S and 330 ft. from W of Blackwell 100-ac. lease, James Jordan Sur. ..... Rig up.
Thayer & Rogers' No. 1 Willingham, 150 ft. N and W of 14.5-ac. tract, Jacob Hernin Sur. ..... Shut down 2,400 ft.
Winona O. & G. Co.'s No. 1 Freeman, 150 ft. from S, W of 89-ac. tract in A. J. Legrone Sur., 4 miles SE of Winona ..... Shut down 3,681 ft.
Witherspoon Oil Co.'s No. 1 T. O. Wright, 150 ft. from NE cor. of Sinclair-Wilson lease, 1,340 ft. from W and 225 ft. N at right angles, Juan Vargas Sur. .... Drlg. 1,654 ft.

UPSHUR COUNTY

Arcadia Refining Co.'s No. 1 R. S. Johnson, 1,000 ft. from N and 1,000 ft. from E of survey, J. H. Mallory Sur. ..... Derrick.
Arcadia Refining Co.'s No. 1 Johnson, 1,000 ft. from N and 1,000 ft. from E of survey, J. H. Mallory Sur. ..... Derrick.
Brennan and Wood's No. 1 Robertson, center of Robertson 41-ac. tract, Ira Stephenson Sur. ..... Drlg. 1,580 ft.
Brenham and Wood's No. 1 W. G. Robertson, 1,850 ft. from N and 700 ft. from W of survey, C. Ira Stephenson Sur. ..... Derrick.
Mudge Oil Co.'s No. 1 J. D. Richardson, 150 ft. from E and 150 ft. from S of most eastern SE cor. of 100-ac. tract, David Ferguson Sur. ..... Derrick.
Penn Oil Co.'s No. 1 Gage (R. W. Maberry), 700 ft. from S and 1,000 ft. from W of Gage 100-ac. tract, J. B. Davenport Sur. ..... Drlg. 4,008 ft.
E. R. Perkins et al's No. 1 Ksy, 660 ft. from S and 660 ft. from W of survey, Thomas J. Elliott Sur. .... Shut down 185 ft.

VAN ZANDT COUNTY

T. Daniels' No. 1 Fannie Cumbine, 185 ft. S and 175 ft. E of NW cor. 156-ac. tract, John Wright Sur. ..... Temporarily abandoned.
Dennis Oil Co.'s No. 1 C. W. Morris, 100 ft. from N and 300 ft. from E line of Morris 160-ac. tract in C. L. Morris Sur., 5 miles SE of Ben Wheeler ..... Temporarily abandoned.
J. C. Fare's No. 1 P. S. Hand, C of Hand's 50-ac. tract, William Shuman Sur. ..... Fishing 5,160 ft.
H. Helms et al's No. 1 Bogue, 647 ft. W and 155 ft. S of SE cor. of J. M. Brown 70-ac. in Marshall University Sur., SE of Van ..... Shut down 3,098 ft.
Humble Oil & Ref. Co.'s No. 1 L. A. Dowdle, 1,027 ft. N of S line and 150 ft. E of W line, William Daniel Sur. ..... Temp. abnd. 2,987 ft.
Humble Oil & Ref. Co.'s No. 1 York, 150 ft. from E and 175 ft. from S, William Daniel Sur. ..... Location.
Imperator Oil Co.'s No. 2 G. W. Carter, 175 ft. from S and 35 ft. from W of G. W. Carter 171-ac. tract, William Daniel Sur. ..... Shut down.
Kelly Oil & Gas Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ..... Shut down 2,300 ft.
Nell McMehory's No. 1 R. V. Murphy, 150 ft. from N and 150 ft. W of survey, H. Bailey Sur. ..... Shut down 2,450 ft.
Pure Oil Co.'s No. 3 Ella York, 250 ft. S of N line and 250 ft. E of W line, John Walling Sur. ..... Drlg. 2,380 ft.

Pure Oil Co.'s No. 3 A. G. Mayfield, 250 ft. S of N and 250 ft. W of E line of lease, Nacogdoches School Land Sur. ..... Drlg. 2,978 ft.
Pure Oil Co.'s No. 4 M. F. Shirley, 491 ft. E of W line and 90 ft. N of S line of lease, John Walling Sur. ..... Drlg. 2,930 ft.
Pure Oil Co.'s No. 2 Brawner, 250 ft. N of S line and 250 ft. W of E line of lease, John Walling Sur. .... Preparing to abandon.
Pure Oil Co.'s No. 2 Shivers, 200 ft. S of N line and 200 ft. E of W line of lease, John Walling Sur. .... Location.
Pure Oil Co.'s No. 4 Neills, 581 ft. E of W line and 225 ft. S of N line of lease, James Rose Sur. ..... Running tubing 2,962 ft.
Pure Oil Co.'s No. 3 J. C. Stewart, 375 ft. N of S line and 150 ft. W of E line of lease, Mund Gross Sur. .. Cement setting 2,604 ft.
Roy Stumpff's No. 1 Riggs, 169 ft. from E and 155 ft. from S of 3-ac. tract, William Daniel Sur. ..... Derrick (rotary).
Van Oil Association's No. 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ..... Shut down 1,028 ft.

WOOD COUNTY

Loche & Clark's No. 1 A. C. Pick, 165 ft. S of NE cor. G. C. Reeves 25-ac. tract, Daniel Fuller Sur. .... Shut down 997 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 50)

Danciger O. & R. Co.'s No. 2 Sullivan, 231 ft. N, 334 ft. W of E 160 ac. of S 264 ac., N½, Sec. 136, Blk. 3, H.&G.N. Sur. ..... S.D. 3,351 ft.
Gulf Prod. Co.'s No. 1 Faulkner (old well being drilled deeper), 330 ft. N line, 330 ft. E line, NE S½, Sec. 33, Blk. B-2, H.&G.N. Sur. ..... Drlg. 2,916 ft.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. B-2, H.&G.N. Sur. ..... S.D. 2,770 ft.
Magnolia Pet. Co.'s No. 1 Barrett, 330 ft. S and E, NE, Sec. 112, Blk. 3, L.&G.N. Sur. ..... Drlg. 2,960 ft.
Magnolia Pet. Co.'s No. 1 Eddington, 330 ft. N, 370 ft. E, NE, Sec. 34, Blk. B-2, H.&G.N. Sur. ..... Drlg. by csg. 2,175 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 25, H.&G.N. Sur. ..... Drlg. 2,120 ft.
Operators Royalty & Prod. Co.'s No. 2 Vanniman, 330 ft. S and W, E½ NE, Sec. 175, Blk. 3, L.&G.N. Sur. .. Drlg. out cmt. 2,835 ft.
Sanders et al's No. 1 Wright, 330 ft. S, 114 ft. E, Sec. 12, Blk. 3, L.&G.N. Sur. ..... S.D. 2,649 ft.
Skelly O. & G. Co.'s No. 1 Henston, 330 ft. N, 330 ft. E, Sec. 164, Blk. 3, L.&G.N. Sur. ..... Drlg. 1,400 ft.
Stanolind O. & G. Co.'s No. 2 Cobb, 330 ft. S and E, Sec. 165, Blk. 3, L.&G.N. Sur. ..... S.D. 2,460 ft.
Sullivan & Ochiltree's No. 1-A Morse, 330 ft. S and W, N½ NE, Sec. 15, Blk. A-9, H.&G.N. Sur. ..... S.D. 2,636 ft.
Warner Oil Co.'s No. 1 Morse, 330 ft. S and W, N½ NW, Sec. 68, Blk. 25, H.&G.N. Sur. ..... Cellar.

HUTCHINSON COUNTY

Continental Oil Co.'s No. 1 Moore, 990 ft. S, 2,276 ft. W, S½ SW, Sec. 21, Blk. M-21, T.C. Sur. ..... Drlg. 2,970 ft.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 81, Blk. 46, H.&T.C. Sur. .... S.D. 450 ft. (SLM).
Dixon Creek Oil Co.'s No. 1-F Johnson Bros., 330 ft. N and E of W 67 ac., SW, Sec. 15, Blk. XO3, H.&O.B. Sur. ..... Drlg. 2,950 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ..... S.D. 2,010 ft.
Huber Pet. Co.'s No. 1 McIlroy, 330 ft. S, 330 ft. W, Sec. 28, Blk. Y, A.&B. Sur. ..... Drlg. 2,250 ft.
Liner Drlg. Co.'s No. 1-D Johnson Bros., 330 ft. N and E, W½ SW, Sec. 6, Blk. 1, B.&B. Sur. ..... T.D. 2,916 ft; to U.R. 6-in. csg; 2,000,000 ft. gas 2,915 ft.
Liner et al's No. 1 Johnson Bros., 990 ft. S, 330 ft. E, W½ SE, Sec. 29, Blk. Y, A.&B. Sur. ..... Spudded and S.D.
Stanolind O. & G. Co.'s No. 2-A Pitcher, 990 ft. S, 330 ft. W, SE, Sec. 19, Blk. M-21, T.C.R.R. Sur. ..... T.D. 3,150 ft; P.B. 3,135 ft. and shot with 170 qts. 3,050-3,135 ft.
Harry Steckel's No. 4 Whittenburg, 990 ft. N, 330 ft. E, NE, Sec. 89, Blk. Z, L.C&S.F. Sur. ..... Rig.
Skelly Oil Co.'s No. 1 Johnson Bros., 660 ft. S and W, SE, Sec. 30, Blk. Y, A.&B. Sur. ..... S.D. 3,115 ft.
The Texas Co.'s No. 1 Moore, 990 ft. N, 330 ft. W, SE, Sec. 21, Blk. M-21, T.-C. Ry. Sur. ..... Drlg. 2,585 ft.
Texilvania Oil Co.'s No. 1 Harvey, 330 ft. N and W, SW NW, Sec. 14, Blk. M-21 ..... S.D. 3,092 ft; swbd. 1 bbl. per hr.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch..... Small S.O. 1,133-40 ft; S.D. 4,-167 ft.

MOORE COUNTY

Cloud & Dana's No. 1 Jones, 330 ft. N and E, SW, Sec. 169, Blk. 3-T, T.&N.O. Sur. ..... Trying to straighten hole; T.D. 3,220 ft.
Continental Oil Co.'s No. 1 Brown, 990 ft. N and W, SE, Sec. 172, Blk. 3-T, T.&N.O. Sur. ..... T.D. 3,655 ft; to complete for gas well.
Dana O. & G. Co.'s No. 1 R. Utey, 330 ft. S and W, NE, Sec. 135, Blk. 3, T.&N.O. Sur. ..... T.D. 3,526 ft; swbng. 12 bbls. per day with little gas.
Gulf Prod. Co.'s No. 2 Kilgore, C SE, Sec. 29, Blk. P.Mc., E.L.R.R. Sur. ..... Run 8-in. csg. 2,844 ft; and stadardizing.
Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ..... Location.
Sunray Oil Co.'s No. 1 Rupert, 660 ft. N, 330 ft. E, NW, Sec. 191, Blk. 3-T, T.&N.O. Sur. ..... Cellar.
Plains Holding Co.'s No. 1 Bivins, 370 ft. E, 660 ft. S, S½ N½, Sec. 95, Blk. 46, H.&T.C.R.R. Sur. ..... Drlg. 1,870 ft; S.G. 1.575 ft.
Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.
The Texas Co.'s No. 1 Jester, C SW, Sec. 14, Blk. 6-T, T.&N.O. Sur. ..... Rig up; to spud.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.
Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.&S.F. Sur. ..... S.D. 800 ft.

POTTER COUNTY

Canadian River Gas Co.'s No. 1-B Crawford..... Drlg. 1,830 ft.

WHEELER COUNTY

Clarity et al's No. 1 Porter, NW cor. SE, Sec. 2, Blk. A-9, H.&G.N. Sur. ..... Rig.
Vollmert's No. 1 Porter, 330 ft. S and E, NE, Sec. 15, Blk. 27, H.&G.N. Sur. ..... Rigged up and S.D.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 50)

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. ..... Spudded 20 ft. and shut down.

ECTOR COUNTY

Gait, Brown & Penn's No. 1 Cowden, C SE Sec. 12, Blk. 44, Twp. 2s, T.&P. Sur. ..... Drlg. 2,880 ft.
H. F. Wurts' No. 1 E. A. Ib.etson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. ..... Shut down 3,275 ft.
Southern Crude Oil Pur. Co.'s No. 2 Crowder & Co., 660 ft. from S and W of NE cor. Sec. 34, Blk. 43, Twp. 1n, T.&P. Sur. ..... Showing oil 4,096-4,147 ft.; shut down 4,302 ft.; flowing 120 bbls. first six hours.

EL PASO COUNTY

Lane-The Texas Company's No. 1 Malone, 2,110 ft. from SW and NW of Sec. 46, J. M. Day Sur. ..... Shut down 3,089 ft.
Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. No. 254, S.F. No. 7,247 ..... Shut down 540 ft.

FISHER COUNTY

Stanolind Oil & Gas Co.'s No. 2 Steele, 1,200 ft. E and 330 ft. N of SW cor. Sec. 210, B.B.B.&C. Sur. ..... Drlg. 1,375 ft.
The Texas Company's No. 1 Jean, 350 ft. from E and 400 ft. S of Sec. 201, Blk. 1, B.B.&C. Sur. ..... Rig.

GAINES COUNTY

Landreth Prod. Co.'s No. 1 Alley, 660 ft. from N and W of Sec. 2, Blk. A-30, P.S.L. Sur. ..... Rigging up.
Texas Consolidated Oil Co. et al's No. 1 Jones, 2,310 ft. from NE Sec. 4, Blk. A-8, P.S.L. Sur. ..... Shut down 3,435 ft.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 4, H.&G.N. Sur. ..... Spudded and shut down.
Perry & Posey's No. 1 Justice, 1,980 ft. from S and 1,650 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... Shut down 1,990 ft.

HOWARD COUNTY

Continental Oil Co.'s No. 1 Brindley, 660 ft. from S and E of Sec. 18, Blk. 33, Twp. 1s, T.&P. Sur. ..... Drlg. by 10-in. casing 1,910 ft.
Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W Sec. 14, Blk. 20, Twp. 1s, T.&P. Sur.. Spudded and shut down.

HUDSPETH COUNTY

Patillo & Welch's No. 1 Briggs, 300 ft. from S and W Sec. 13, Blk. 73, Twp. 7, T.&P. Sur. ..... Drlg. 425 ft.
Theison's No. 1 University, 3,050 ft. from S and 2,235 ft. from E of Sec. 17, Blk. E ..... Spudded 35 ft. and shut down.

IRION COUNTY

Central Oil Co.'s No. 2 Horney, 150 ft. from N and 1,320 ft. from E Sec. 2, Blk. 3, H.&T.C. Sur. ..... Shut down 1,360 ft.
Dixie Oil Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... 300 ft. oil in hole from 4,155-63 ft.; drlg. 4,510 ft.
Straughn & Texannati Oil Co.'s No. 1 Tankersley, 150 ft. from S and 750 ft. from W of Sec. 4, Gonzales County School Land ..... Plugging back to 1,230 ft. to shoot; total depth 1,506 ft.

JONES COUNTY

Bond & Trout's No. 1 Williams, 330 ft. S and E of SW cor. of J. W. Martin Sur. A-1,308 in Sec. 12 ..... Shut down 2,581 ft.; shot 4 qts. 2,546-66 ft.
Jameson et al's No. 1 King, 4,681 ft. from S and 150 ft. from E of M. Bueno Sur. No. 196 ..... Shut down 1,950 ft.
Hardly Able Oil Co.'s No. 1 Butter, 5,700 ft. from S and 330 ft. from E of W. Littlefield Sur. No. 282, Abst. 251 ..... Drlg. 2,425 ft.
Shaheen et al's No. 1 Chittim, 165 ft. from S and W of 139.8-acre farm in G. Martinez Sur. No. 195 ..... Swabbed 20 bbls. in 24 hours; shut down 2,049 ft.
Young & McNeill's No. 1 L. R. Cade, 150 ft. from N and 450 ft. E of NW cor. of J. A. Williams 200-acre tract in Sec. 17, but in Sec. 12, Blk. 19, T.&P. Sur. ..... Total depth 495 ft.

LOVING COUNTY

Eppenauer et al's No. 2 Allen, 2,310 ft. from NE and 330 ft. from NW Sec. 90, Blk. 1, W.&N.W. Sur. ..... Shut down 4,140 ft.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S Sec. 46, Blk. 53, T.&P. Sur. ..... Drlg. 400 ft.
Ervin & Mahres' No. 1 Meyer, 990 ft. NE and 330 ft. SE of Sec. 3, Blk. 2, W.&N.W. Sur. ..... Location.
Falbre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW Sec. 79, Blk. 33, H.&T.C. Sur. ..... Total depth 1,335 ft.; underreaming 8¼-in. casing 1,350 ft.
Henshaw et al's No. 2 Reagan & McElvain, 1,650 ft. from SW and 990 ft. from SE Sec. 84, Blk. 7, W.&N.W. Sur. ..... Abandoned location.
Hoffman et al's No. 1 Ramsey et al, 330 ft. NE and SE Sec. 83, Blk. 1, W.&N.W. Sur. ..... Drlg. 3,335 ft.
Hoffman et al's No. 2 Ramsey et al, 2,310 ft. from NE 330 ft. from SE Sec. 83 ..... Shut down 725 ft.
Irwin et al's No. 1 Auld, 1,825 ft. from NE and 1,298 ft. from NW Sec. 67, Blk. 1, W.&N.W. Sur. ..... Rig up.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 93, Blk. 1, W.&N.W. Sur. ..... Shut down 4,050 ft.
Lockhart & Co.'s No. 2 fee, 676 ft. S, 330 ft. W Sec. 91, Blk. 1, W.&N.W. Sur. ..... Rigged up and shut down.
Lockhart's No. 1 Bell, 1,721 ft. from NE and 410 ft. from SE Sec. 91, Blk. 1, W.&N.W. Sur. ..... Drlg. 1,610 ft.
Lockhart & Co.'s No. 2 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 33, H.&T.C. Sur. ..... Rigged up and shut down.
Martin et al's No. 1 Johnson, 1,330 ft. from NW and 330 ft. from SW Sec. 86, Blk. 1, W.&N.W. Sur. ..... Location.
Richmond Drlg. Co.'s No. 1 Russell, 990 ft. from NE and 330 ft. from NW Sec. 80, Blk. 31, W.&N.W. Sur... Drlg. 1,400 ft.
Rush et al's No. 1 Wheat, 330 ft. from NW and SW Sec. 77, Blk. 1, W.&N.W. Sur. ..... Cellar.
Slagel Drlg. Co.'s No. 1 Cartwright et al, 2,310 ft. from S and 990 ft. from W Sec. 1, Blk. 57, Twp. 1, T.&P. Sur. ..... Total depth 3,182 ft.; 300 ft. oil in hole.
W. A. Suddreth et al's No. 1 Capitola Pool, 2,970 ft. from NE and 990 ft. from NW Sec. 73, Blk. 33, H.&T.C. Sur. ..... Shut down 1,315 ft.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW Sec. 66, Blk. 1, W.&N.W. Sur. ..... Rig.
California Co.'s No. 3 Allen, 2,191 ft. from NW and 2,152 ft. from SW Sec. 90, Blk. 1, W.&N.W. Sur. .... Drlg. 2,850 ft.
California Co.'s No. 4 Allen, 3,121 ft. from NW and 3,113 ft. from SW Sec. 90, Blk. 1 ..... Drlg. 600 ft.
West Texas Pet. Corp.'s No. 1 Salsbury, 930 ft. from NW and SW Sec. 89, Blk. 1, W.&N.W. Sur. ..... Drlg. 4,325 ft.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor. Sec. 132, E.L.R.R. Sur. ..... Drlg. up underreamer lugs; total depth 2,665 ft.
Voss & Bryan et al's No. 1 F. Bredenberger, 600 ft. from N and 1,000 ft. from W Sec. 455, E. Henkel Sur. ... Fishing 800 ft.

PECOS COUNTY

Hagen et al's No. 1 Shearer, 660 ft. from SE and 660 ft. from SW Sec. 45, Blk. 10, H.&G.N. Sur. ..... Drlg. 425 ft.
McCurdy & Brown's No. 2 Tippett, 150 ft. from N and W of SE Sec. 40, Blk. 104, G.C.&S.F. Sur. ..... Location.
J. R. Miller et al's No. 1 Bennett, 359 ft. W of CWL Sec. 1, Blk. 119, G.C.&S.F. Sur. ..... Shut down 2,282 ft.
Penn Oil Co. et al's No. 1 Alvis, 2,358 ft. from S and 1,327 ft. from W Sec. 155, Blk. 3, T.&P. Sur. ..... Drlg. 2,098 ft.
Perren Oil Co.'s No. 2 Eaton, S of E Sec. 27, Blk. 3, H.&T.C. Sur. ..... Fishing 1,765 ft.
Pure Oil Co.'s No. 1 Harrison, 2,310 ft. from N and 330 ft. from W of Sec. 203, Blk. 3, T.&P. Sur. ..... Shut down 5,090 ft.
Riser & White's No. 1 Riser, 2,297 ft. from S and 997 ft. from E of Sec. 24, Blk. 12, H.&G.N. Sur. ..... Drlg. 765 ft.
California Co. et al's No. 1 Thomas, 990 ft. from NW and SW Sec. 31, Blk. 34, H.&T.C. Sur. ..... Location.

Billions of Bubbles

When the Elevator Drops . . .

THE hair is likely to rise up, the blood pressure to mount, and the stomach to sink.

But aside from these fluctuations, a falling elevator illustrates beautifully an operating principle in the Campbell Cooling Tower.

In Campbell Cooling Towers the spray is shot downward with such continuous force (no intercepting decks) that the rising steam and saturated air below is forced out between the lower louvers . . . just as the air in the bottom of an elevator shaft is driven out by the descending cage.

Campbell Cooling Towers can be recognized as far as they can be seen by their characteristic louvers . . . narrow and closely spaced. Close enough to protect the spray from brisk winds, and yet far enough apart to prevent warm-air blanketing in the region of the coils. Look into this louver business; there's a lot to it.

Campbell Cooling Towers are thoroughly described in Bulletin No. 7. A copy will be mailed you upon request.

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STEARNS-ROGER MFG. CO., DENVER
MID-CONTINENT AGENCY

Originators of Oil-Froth Absorbers

Whitaker et al's No. 1 Mary Devlin, 150 ft. from N and 150 ft. from E Sec. 69, F. Hernandez Sur. ..... Drlg. 300 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,120 ft. S and 1,100 ft. from W Sec. 25, Blk. 9 ..... Location.

REEVES COUNTY

R. T. Hansford's No. 1 Williams, 150 ft. from S and W Sec. 17, Blk. 6, H.&G.N. Sur. ..... Shut down 380 ft.
Humble Oil & Ref. Co.'s No. 1 Bolmorhea Livestock Co., 1,320 ft. from N and 1,320 ft. from W Sec. 33, Blk. 5, H.&G.N. Sur. ..... Material.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur.... Running 5 3/16-in. casing; total depth 4,415 ft.
California Co.'s No. 2 Kioh & Rumsey, 990 ft. from S and 1,520 ft. from E Sec. 11, Blk. 74, Twp. 4, T.&P. Sur. ..... Drlg. 3,350 ft.

RUNNELS COUNTY

Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 419 ..... Shut down 2,335 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Shut down 2,035 ft.
Teas & Gant's No. 1 Allison, 1,320 ft. N and E of SW cor. Sec. 37, Blk. K, G.H.&S.A. Sur. ..... Shut down 5,006 ft.; contract depth.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,362 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... Fishing 2,940 ft.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... Shut down 5,053 ft.

SCURRY COUNTY

G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Fishing 5,002 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and shut down.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... Fishing 3,112 ft.

STERLING COUNTY

Beesley et al's No. 1 Foster, 2,940 ft. N and 300 ft. W of SW cor. Sec. 7, Blk. 32, H.&T.C. Sur., but in Sec. 16, Blk. 34, Twp. 4s, T.&P. Sur. ..... Drlg. 1,210 ft.

TAYLOR COUNTY

John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor. Sec. 46, Lunatic Asylum Land ..... Drlg. 6,355 ft.
Sanger et al's No. 1 City of Abilene, 830 ft. from S and 1,400 ft. from E of Sec. 66, Blind Asylum Land ..... Shut down 2,785 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... Shut down 2,669 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... Shut down 3,150 ft.
Miller Bros.' No. 1 Allison & Burke, C NW cor. Sec. 10, Blk. 176, T.&P. Sur. ..... Shut down 130 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S Sec. 26, Blk. 161, G.C.&S.F. Sur... Shut down 6,120 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... Shut down 912 ft.

TOM GREEN COUNTY

Belding & Dutton's No. 1 Norsworthy, 2,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... Shut down 760 ft.; show oil and gas 725 ft.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Dinger Sur. ..... Plugged back to 2,405 ft. to straighten hole; shut down 2,447 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur.... Shut down 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... Shut down 300 ft.

UPTON COUNTY

Duffey et al's No. 1 McClintic, 990 ft. from N and 330 ft. from E, C.C.S.D.&R.G.N.G. Sur. ..... Drlg. 2,755 ft.
Mintex Oil Co.'s No. 1 Lane, 2,310 ft. from N and 1,650 ft. from W Sec. 36, Blk. 1, M.-K.-T. Sur. ..... Drlg. 460 ft.

VAL VERDE COUNTY

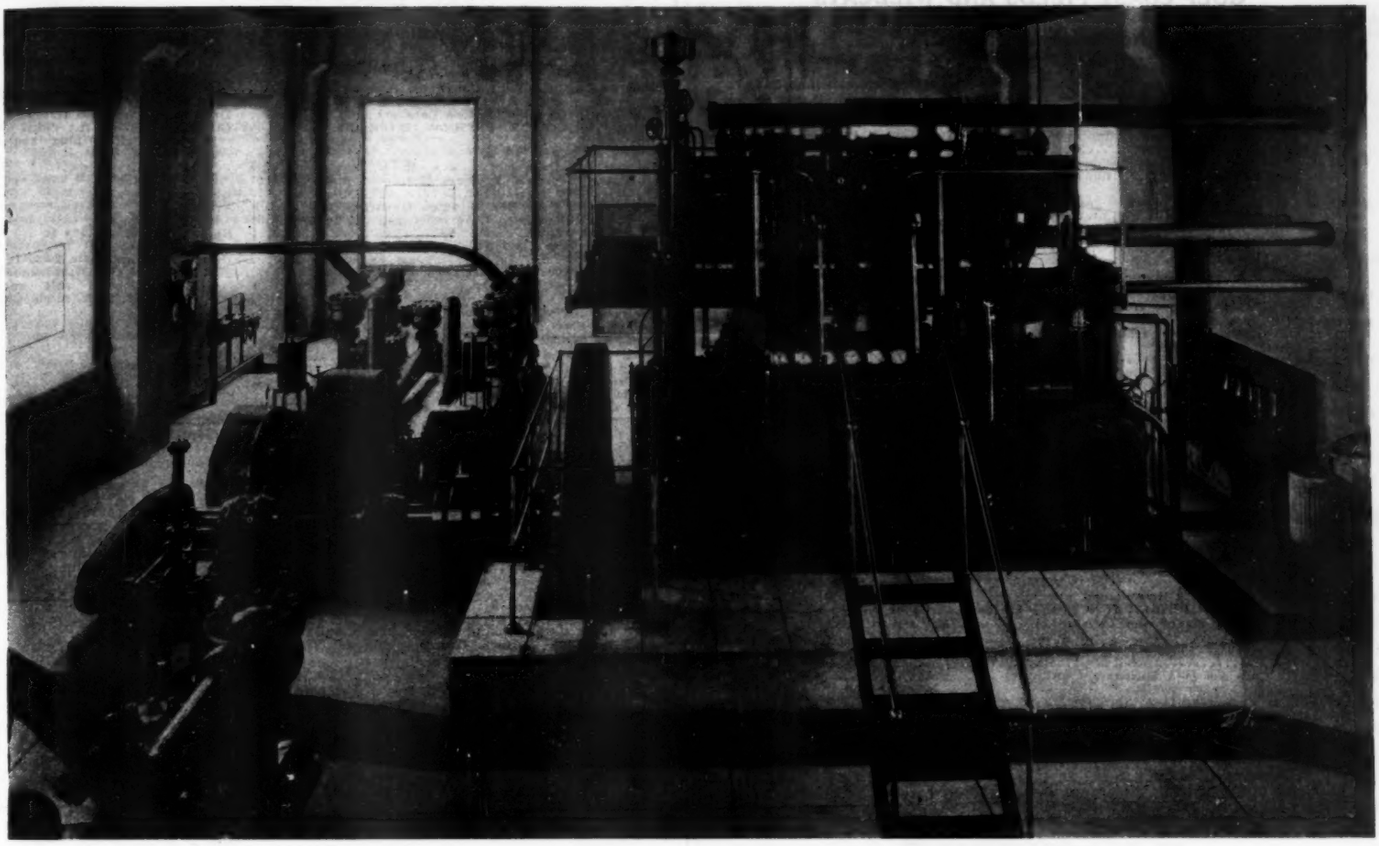
Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Shut down 5,420 ft.; to run 5 3/16-in. casing.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Waiting for cement to set 6,770 ft.

WARD COUNTY

Bradford et al's No. 1 Carson, 990 ft. from NE and SE Sec. 26, Blk. 5, H.&T.C. Sur. ..... Shut down 850 ft.
Beckley et al's No. 1 Johnson, 4,140 ft. from NE and 990 ft. from SE Sec. 8, Blk. 32, H.&T.C. Sur. ..... Shut down 800 ft.
Buster Black's No. 1 Hall & Roberts, 990 ft. from NE and 1,650 ft. from NW Sec. 17, Blk. 34, H.&T.C. Sur.. Shut down 350 ft.
Clyde Bradford's No. 1 Hardinage and Welsor, 330 ft. from SE and 330 ft. from SW, H.&T.C. Sur. ..... Drlg. 1,230 ft.
Chester & Smith's No. 1 Booger, 1,300 ft. from SE and 150 ft. from SW Sec. 11, Blk. 5, H.&T.C. Sur. ..... Show gas 2,125 ft.; increase at 2,135 ft.; drlg. 2,150 ft.
Central Oil & Gas Co.'s No. 1 Barrow, 330 ft. from NW and 1,263 ft. from SW Sec. 55, J. W. Jackson Sur. ..... Rig.
Gibson & Johnson's No. 1 Johnson, 4,140 ft. from SE and 990 ft. from NE Sec. 10, Blk. 32, H.&T.C. Sur.... Pulling 10-in. casing 807 ft.
Gulf Prod. Co.'s No. 3 Wristen Bros., 320 ft. NE of SW and 320 ft. SE of NW Sec. 18, Blk. 5, H.&T.C. Sur. ... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-77 ft.; salt water 2,515 ft.; plugged back to 2,477 ft.
Hankinson et al's No. 1 Emery, 3,090 ft. from SE and 510 ft. from SW Sec. 26, Blk. 5, H.&T.C. Sur. ..... Drlg. 410 ft.
Magnolia Pet. Co.'s No. 1 Sealy (Atlantic), 2,130 ft. from S and 1,650 ft. from E Sec. 45, Blk. F, G.M.M.B.&A. Sur. ..... Drlg. 2,230 ft.
R. F. Owens' No. 1 Johnson, 100 ft. from NE and 1,100 ft. from SE of Sec. 8, Blk. 33, H.&T.C. Sur. ..... Drlg. 3,940 ft.
Peck et al's No. 1 Merrett, 3,166 ft. from NE and 2,648 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur. ..... To run 10-in. casing; total depth 790 ft.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... Location.
Reckford & Ferglarr's No. 1 Booger, 4,051 ft. from NE and 1,983 ft. from SE Sec. 11, Blk. 5, H.&T.C. Sur.... Shut down 2,240 ft.; top pay 2,170 ft.
Shipley et al's No. 5 Hayslett, 2,490 ft. from SE and 1,980 ft. from SW Sec. 17, Blk. 5, H.&T.C. Sur. ..... Shut down 2,520 ft.; 1,500 ft. oil in hole.
Simms Oil Co.'s No. 1 Himmel, 330 ft. from NE and 2,310 ft. from SE Sec. 30, Blk. B-29, P.S.L. Sur. .... Rigging up.
California Co. et al's No. 1 Lanham, 990 ft. from NE and SE Sec. 35, Blk. 34, H.&T.C. Sur. ..... Building rig.
California Co.'s No. 1 Gordon, 330 ft. from NE and SE Sec. 6, Blk. 34, H.&T.C. Sur. ..... Top pay 2,352 ft.; 300 ft. oil and f.s. in hole; shut down 2,399 ft.
Shipley et al's No. 1 Monroe, 330 ft. SE SW Sec. 3, Blk. 1 ..... Total depth 3,303 ft.; running 6-in. casing.

WINKLER COUNTY

White et al's No. 1 Owenby, 305 ft. from NE and 1,185 ft. from SE Sec. 7, Blk. 23, H.&T.C. Sur. ..... Shut down 200 ft.
Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor. Sec. 2, Blk. B-5 ..... Shut down 4,640 ft.



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VACUUM OIL COMPANY

GULF COAST FIELDS AND WILDCATS

(Continued from Page 42)

The Texas Company's No. 4 Wilburn (D.D.), Henry Griffith League, approximately 1,700 ft. from W line and 50 ft. from S line of tract ..... Drlg. shale and lime 6,238 ft.
Yount Lee Oil Co.'s No. 10 Woodward, southeast ..... Total depth 6,484 ft.; set 5½ jts. screen 5,428 ft.
Yount Lee Oil Co.'s No. 15 Chambers (D.D.), Wm. Bloodgood Sur., 50 ft. from E line and 355 ft. from N line tract ..... Cored oil sand 4,684-4,700 ft.
Yount Lee Oil Co.'s No. 19 Chambers, south flank, Wm. Bloodgood Sur., 10 ft. N Sun Oil Co.'s No. 8 ..... Drlg. salt 3,006 ft.; top of salt 1,765 ft.
Yount Lee Oil Co.'s No. 2 Winfree, west flank, W. D. Smith Sur., 50 ft. from S line and 100 ft. from E line of tract ..... Set 121 ft. screen 5,493 ft.; comp. flowing 1,020 bbls. pipe line oil daily, 660 lbs. on ¼-in. choke, 32 gravity.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 1 Martha Remmert ..... Location.

HUMBLE—HARRIS COUNTY

Rio Bravo Oil Co.'s No. 2 H.E.&W.T., Adams Sur., 250 ft. N along railroad tract from No. 1 and 25 ft. W from center of said tract ..... Rig.
Rio Bravo Oil Co.'s No. 1 Westheimer, John Brown Jones One-Third League, 800 ft. from E line and 100 ft. from S line of Blk. 1, in Lot 48, Westheimer Subd. ..... Location.
Sun Oil Co.'s No. 22 Bender, Adams Sur., 200 ft. NE at right angles from midway point on line between Nos. 3 and 20 ..... Drlg. rock 3,692 ft.
Sun Oil Co.'s No. 23 Bender, Adams Sur., 300 ft. NW of No. 21 in line with Nos. 21 and 15 ..... Drlg. shale 4,141 ft.
Sun Oil Co.'s No. 1 O'Connor, Adams Sur., 75 ft. from S line and 75 ft. from E line of 1-ac. tract by S.P. depot ..... Derrick.
Sun Oil Co.'s No. 1 Beck, west flank ..... Drlg. shale 5,226 ft.
The Texas Company's No. 29 G.O.&G. (workover), J. B. Stevenson Sur. ..... Total depth 3,185 ft.; sidetracked old liner to 3,088 ft.; set 195 ft. 4½-in. screen; comp. pumping 260 bbls. fluid, 13 bbls. net oil.
Trapshooter Oil Co.'s No. 2 Rosenbaum ..... Standing 4,067 ft.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 1 Manchester (workover) ..... Set screen 4,850 ft.; comp. flowing 1,200 bbls. oil.
Gulf Prod. Co.'s No. 32 Taylor, James Hamilton Sur. (D.D.) ..... Comp. flowing 300 bbls. 4,775 ft.
Rio Bravo Oil Co.'s No. 14-A Settegast (workover) ..... Total depth 5,008 ft.; set whipstock to sidetrack 2,610 ft.
Rio Bravo Oil Co.'s No. 21-A Settegast, J. Kopman Sur., 400 ft. S and 200 ft. N of NE cor. "A" lease ..... Rig.
Smith et al's No. 1 Bender fee, B.B.B.&C. Sur. No. 1,028, 173 ft. from ... and 14 ft. from N line of Lot 40, Jones Subd. ..... Sand showing oil 4,467 ft.; cmtd. 6⅝-in. csg. 4,159 ft.; drilled plug and set 1 jt. 4½-in. screen 4,469 ft.; standing.
Tilton & Perot's No. 1 Gulf fee, B.B.B.&C. Sur. No. 1,028, 230 ft. from E line and 26 ft. from S line, Lot 26, Jones Subd. ..... No report.

BIG CREEK—FORT BEND COUNTY

Gulf Prod. Co.'s No. 52 Davis M. Young Sur. (workover) ..... Tested salt water 4,233 ft.; perforating csg. to test 3,500-ft. sand.

NASH—BRAZORIA COUNTY

Rycade & Abercrombie's No. 5 Wisdom (D.D.) ..... Drlg. sand and shale 4,212 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 13 Mayes, B.B.B.&C. Sur. No. 4, 75 ft. W and 700 ft. S of NE cor. of survey ..... Gumbo 1,616 ft.; cmtd. 13⅜-in. csg.

SPINDLETOP—JEFFERSON COUNTY

Gulf Production Co.'s No. 7 Mann (D.D.), John Douthit Sur. ..... Milling out of csg. 3,623 ft. to sidetrack.
Yount Lee Oil Co.'s No. 12 Fee (D.D.), John Douthit Sur. ..... Drlg. sand and shale 4,250 ft.
Yount Lee Oil Co.'s No. 41 McFaddin (workover), P. Humphreys Sur. ..... Dry and abandoned 5,936 ft.
Yount Lee Oil Co.'s No. 146 McFaddin, P. Humphreys Sur., 2,772 ft. from W line and 2,528 ft. from N line of tract ..... Drlg. shale and lime 6,165 ft.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 15 Cade (workover), M. Fitzsimmons Sur., 150 ft. W No. 12 ..... Pulling tubing to deepen 4,008 ft.
Yount Lee Oil Co.'s No. 20 Cade ..... Rig standing.
Yount Lee Oil Co.'s No. 21 Cade, Fitzsimmons Sur., 150 ft. W of No. 17 ..... Drlg. 400 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 29 Moore, John Frazier Sur., 600 ft. N of 26 in line with Nos. 23 and 26 ..... Spudded.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 5 Janner, J. F. Perry Sur., 1,200 ft. from SW line and 1,100 ft. from SE line ..... Drlg. gumbo 648 ft.
Sun Oil Co.'s No. 5 Clay, J. F. Perry Sur., 200 ft. from SW line and 1,850 ft. from SE line of Clay tract ..... Drlg. sand and shale 1,565 ft.
Sun Oil Co.'s No. 3 W. F. Schlottman, J. F. Perry Sur., 300 ft. from NE line and 1,522 ft. from SE line of tract ..... Drlg. shale 1,526 ft.

ALLEN—BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen (workover), J. G. McNeel Sur., 1,311 ft. from W line and 2,569 ft. from N line of survey ..... Total depth 4,999 ft.; preparing to sidetrack 4,375 ft.
Mills Bennett Prod. Co.'s No. 1 Poole, T. & W. Alley League, 1,390 ft. from E line and 100 ft. from S line (workover) ..... Heaving shale 4,867 ft.; showing gas.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds' No. 7 Davis, David Kokernot Sur., 100 ft. S of No. 4 ..... Drlg. shale 3,189 ft.
Cranfill-Reynolds Oil Co.'s No. 1-C Kirby fee ..... Drill stem stuck 6,154 ft.
Cranfill-Reynolds Oil Co.'s No. 2 Moore's Bluff (workover) ..... No report.

BLUE RIDGE—FORT BEND COUNTY

Doney & Means' No. 1 Blakely, E. Drew Sur., 430 ft. W and 75 ft. N of SE cor., Lot 3, Blk. D ..... Drlg. shale and lime 1,250 ft.
Teischow, Cady et al's No. 5 Blakely, E. Drew Sur., 150 ft. from N line and 70 ft. from W line of tract ..... Drlg. gumbo 525 ft.

HANKAMER—LIBERTY COUNTY

Gulf Production Co.'s No. 12 Boyt, H.&T.C. Sur. No. 22, 500 ft. N of No. 1 in line with Nos. 6 and 11 ..... Drlg. gumbo 1,175 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 114-A Cotton ..... Spudded.
Rio Bravo Oil Co.'s No. 113-A Cotton ..... Comp. pumping 8 bbls. daily 636 ft.

MOSS BLUFF—LIBERTY AND CHAMBERS COUNTIES

Humble Oil & Ref. Co.'s No. 2 Breeding, northwest flank ..... Drlg. shale 6,516 ft.
Humble Oil & Ref. Co.'s No. 2 Sergeant, east flank ..... Fishing 5,891 ft.
Texas Gulf Sulphur Co.'s No. 1 R. H. Munger, J. McFaddin Sur., 100 ft. from N line and 100 ft. from E line 27-ac. tract ..... Sulphur test.
Texas Gulf Sulphur Co.'s No. 4 Carter, B. M. Spinks Sur., 100 ft. from N line and 100 ft. from E line of 60-ac. tract ..... Sulphur test.
Texas Gulf Sulphur Co.'s No. 1 Cowan, B. M. Spinks Sur., 200 ft. N and 1,150 ft. W of SE cor. 154-ac. tract ..... Sulphur test.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 14 Pratt-Hewitt-Rooke ..... Shale 6,120 ft.; fishing.
Houston Oil Co.'s No. 5 Wilson Heard (workover) ..... Total depth 3,686 ft.; cmtd. bottom hole.
Houston Oil Co.'s No. 1 Doughty ..... Set 1 jt. screen 6,403 ft.; running tubing.
Houston Oil Co.'s No. 3 Rose Lambert ..... Drlg. hard lime 6,338 ft.
Houston Oil Co.'s No. 1 O'Brien (D.D.), Blk. 5 ..... Oil sand 6,405-11 ft.; cmtd. 6⅝-in. csg.; drilled plug and set screen.
Houston Oil Co.'s No. 5 Mrs. M. H. Ryals, Refugio Town Tract, 150 ft. from N line of tract and 527 ft. east of No. 1 ..... Derrick.
Houston Oil Co.'s No. 6 Pratt-Hewitt-Rooke (D.D.), Thos. Mullen Sur., 1,150 ft. N and 200 ft. W of SE cor. of tract ..... Rig up to deepen 3,708 ft.
Mission Drilling Co.'s No. 2 Moss-Powers, C, Blk. 109, townsite ..... Drlg. gumbo and lime 2,235 ft.
Moody-Seagraves Prod. Co.'s No. 6 Morgan-O'Connor ..... Total depth 6,470 ft.; plugged to 6,421 ft.; tested salt water; milling out 6,388 ft. to sidetrack.
Moody-Seagraves Prod. Co.'s No. 8 O'Connor, Refugio Town Tract, 350 ft. east of No. 1 and 150 ft. from S line of lease ..... Drlg. 400 ft.
Moody-Seagraves Prod. Co.'s No. 2-A J. F. B. Heard ..... Rig standing.
Moody-Seagraves Prod. Co.'s No. 1 Shelly ..... Drlg. plug 6,456 ft.
Ed Price's No. 3 Mission River, Refugio Town tract, 750 ft. up river from No. 2 on S bank of river ..... Shut down 350 ft.
Saxet Oil Co.'s No. 2 Cable (D.D.), C, Blk. 20, Town Commons ..... Cmtd. 4½-in. csg. 3,700 ft.
L. L. Smith's No. 2 Rogers, James Power Sur. ..... Water sand 6,510 ft.; plugged to 3,640 ft.; tested salt water and abandoned.
United Prod. Corp.'s No. 1-A Fox, L. Brown Sur., 750 ft. W along S line from SE cor. of lease and 1,000 ft. N of said line ..... Drlg. shale 5,084 ft.
United Prod. Corp.'s No. 3 Fox (workover) ..... Oil sand 6,350-59 ft.; cmtd. 5½-in. csg. 6,347 ft.; drilled plug and set 17 ft. of 3-in. screen; swabbed salt water; pulling screen to deepen.
United Prod. Corp.'s No. 12 Fannie Heard ..... Location abandoned.
United Prod. Corp.'s No. 9 O'Brien, 150 ft. S of S line and 175 ft. E of extended W line of Moody-Seagraves' O'Brien "B" lease ..... Drlg. sandy lime 4,665 ft.
United Prod. Corp.'s No. 10 O'Brien, 150 ft. E of E line of Blk. 106, Refugio Townsite, and 428 ft. N of Refugio Town Tract Sur. ..... Oil sand 6,448-56 ft.; cmtd. 7-in. csg. 6,446 ft.; drilled plug and set 18 ft. of 5-in. screen; comp. flowing 800 bbls. pipe line oil, 1,225 lbs. pressure on tubing and 1,300 lbs. pressure on csg., ¼-in. chokes.
United Prod. Corp.'s No. 11 O'Brien, 200 ft. from E line and 800 ft. N of extreme S line of lease ..... Oil sand 6,431-43 ft.; set 18 ft. 5-in. (O.D.) screen; comp. flowing 100 bbls. daily, 1,750 lbs. pressure on tubing and 1,950 lbs. on csg., ¼-in. chokes.
United Prod. Corp.'s No. 6 Power, S Blk. 83, Refugio Townsite ..... Drlg. hard sandy lime 4,338 ft.
United Prod. Corp.'s (Union) No. 2-A Rose Lambert, 175 ft. W and 200 ft. N of SE cor., Blk. 1, of town tract ..... Drlg. sticky shale 5,441 ft.
United Production Corp.'s No. 6 A. W. J. Heard, Refugio town tract, 1,253.6 ft. from W line and 257 ft. from S line of tract ..... Drlg. shale and lime 1,618 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Martha Moss ..... Oil sand 6,518-6,525 ft.; cmtd. 7-in. csg. 6,505 ft.
Vacuum Oil Co.'s No. 7 Bordages, Sec. 9-10s-9w (workover) ..... Set screen 3,803 ft.; comp. pumping 150 bbls. fluid, 65% b.s. and water.
Vacuum Oil Co.'s No. 31 Miller (D.D.), 360 ft. from N line and 900 ft. from W line of SW NE, Sec. 8-10s-9w ..... Drlg. sandy shale 4,404 ft.
Vacuum Oil Co.'s No. 7 State, 319 ft. N and 260 ft. W SE cor. NE Sec. 8-10s-9w ..... Drlg. hard sand 6,276 ft.
Yount Lee Oil Co.'s No. 2 Miller, 125 ft. N and 120 ft. W SE cor. NE NW, Sec. 8-10s-9w ..... Rigging up.

EDGERLY—CALCASIEU PARISH

Rex Pet. Co.'s No. 2 Prairie Narron, Sec. 21-9s-11w, 365 ft. from S line and 50 ft. from E line of lease ..... Coring sand showing oil 4,087 ft.
Strange Oil Co.'s No. 1 Reed (D.D.), Sec. 28-9s-11w, 60 ft. W and 100 ft. S of NE cor., Lot 3, Koonce Subd. ..... Deepened from 3,679 to 3,687 ft.; set 35 ft. of 3-in. screen; rigging up to pump.

HACKBERRY—CAMERON PARISH

Federal Petroleum Co.'s No. 2 Hebert, 660 ft. S and 660 ft. W of NE cor. NW NW, Sec. 33-12s-10w ..... Drlg. sticky shale and lime 4,100 ft.
R. E. Seiss' No. 2 J. M. Vincent ..... Gumbo 1,830 ft.; shut down.
The Texas Company's No. 8 State ..... Derrick.
Yount Lee Oil Co.'s No. 34 State ..... Location.
Yount Lee Oil Co.'s No. 36 State ..... Location.
Yount Lee Oil Co.'s No. 37 State ..... Location.
Yount Lee Oil Co.'s No. 38 State ..... Location.
Yount Lee Oil Co.'s No. 39 State ..... Location.

VINTON—CALCASIEU PARISH

Gulf Prod. Co.'s No. 6 Gardner, 350 ft. N and 554 ft. W of SW cor. SE NE Sec. 33-10s-12w ..... Set screen 3,886 ft.; swabbing.
Vinton Pet. Co.'s No. 11 Matilda Gray (20 acres), 608 ft. from S line and 195 ft. from E line of tract in Sec. 33-10s-12w ..... Drlg. gumbo 2,626 ft.
Vinton Pet. Co.'s (Lucky Ten) No. 1 Lizzo ..... Tested salt water 3,285 ft.; pulling liner and screen.
Wilson-Broach's No. 8 Wilson, Sec. 33-10s-12w, 100 ft. N of Gulf's No. 70 G.&N.G. Sur. ..... Set 44 ft. 4½-in. screen 3,180 ft.; comp. pumping 310 bbls. daily.

BAYOU BOUILLON—ST. MARTIN PARISH

Humble Oil & Ref. Co.'s No. 1 Woodyard Lake ..... Drlg. shale 6,471 ft.
Humble Oil & Ref. Co.'s No. 4 State ..... Drlg. shale 4,879 ft.

SWEET LAKE—CAMERON PARISH

Magnolia Pet. Co.'s No. 2 Sweet Lake, Sec. 5-13s-7w ..... Drlg. 5,002 ft.
Pure Oil Co.'s No. 10 Yount Lee ..... Drlg. hard dry shale and soft sand 7,288 ft.

PORT BARRE—ST. LANDRY PARISH

The Texas Company's No. 9 Botney Bay ..... Set 53 ft. 6⅝-in. screen 3,399 ft.; rigging up to pump.

SORRENTO—ASCENSION PARISH

Gulf Ref. Co.'s No. 19 United Land Co. ..... Salt 4,748-4,870 ft.; plugged to sand 4,345-51 ft.; set 2 jts. 4½-in. screen; comp. flowing 300 bbls. pipe line oil on ¼-in. choke, 1,500 lbs. pressure, 31 gravity.

STARKS—CALCASIEU PARISH

Gulf Refining Co.'s No. 27 Lutcher-Moore, Sec. 19-9s-12w ..... Spudded.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 762 fee (workover) ..... Drlg. salt 7,939 ft.; top of salt 5,864 ft.
Union Sulphur Co.'s No. 765 fee, Sec. 29-9s-10w ..... Drlg. gumbo 3,480 ft.

Union Sulphur Co.'s No. 766 fee, Sec. 29-9s-10w.....Tested salt water 4,338 ft.; pulling screen.

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 2 State, Sec. 18-12s-12w, 1,345 ft. from E line and 1,565 ft. from N line .....Salt 4,207-5,330 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Empire Gas & Fuel Co.'s No. 1 Kuntze, San Felipe .....Drlg. shale 6,615 ft.
O'Hara et al's No. 1 Schrader .....Drlg. gumbo 3,456 ft.
Parmerson & Cafferkey et al's No. 1 W. M. Schlecte, John Fitzgibbons Sur., 1,850 ft. from SE line and 3,100 ft. from NE line of Sur. .....Drlg. rock 359 ft.

BRAZORIA COUNTY

The Texas Company's No. 1 Ewin, Harvey Little Sur. ....Abandoned 7,648 ft.
Faust et al's No. 5 Faust, Blk. B, Sec. 3, H.T.&W. Sur....Drlg. shale 6,341 ft.
Freeport Sulphur Co.'s No. 2,001 fee, Bryan Heights ....Heaving shale 5,260 ft.; S. D.
Layne et al's No. 1-A Wisdom, Damon Mound .....Set 3 jts. 4½-in. screen 3,708 ft.; bailing.
Amerada Pet. Corp.'s (Rycade) No. 2 Seaburn, Stratton Ridge .....Drlg. sand and shale 7,506 ft.
United Oil Syndicate's No. 1 Speer, A. A. Talmadge Sur...Gumbo 1,820 ft.; drill stem stuck.

BURLESON COUNTY

Mid-South Oil Co.'s No. 1 Duckworth .....Tested brackish water 2,601 ft.; shut down.
Reynolds Oil Co.'s No. 1 Harris, 500 ft. from W line and 400 ft. from N line of J. M. McKean Sur. .....Shut down 400 ft.

CALHOUN COUNTY

The Texas Company's No. 1 Smith, J. Timmins Sur., Will Mousin and Driscoll Sub. .....Drlg. sandy shale 4,115 ft.

FORT BEND COUNTY

H. R. Cullen's No. 1 Lockwood, John Rabb Sur., 475 varas from W line of E half of survey and 1,245 ft. from N line .....Derrick.

HARRIS COUNTY

Humble Oil & Ref. Co.'s No. 5 Minnetex, Mykawa, 150 ft. from S line and 200 ft. from W line, Lot 261, Wm. Lovett Sur. .....Location.
Humble Oil & Ref. Co.'s No. 6 Minnetex, Mykawa, Wm. Lovett Sur., C of Lot 254 .....Rig.

JACKSON COUNTY

Chicago-Gulf Co.'s No. 1 Rogers (workover) .....Rig up to deepen 3,662 ft.; standing.

JEFFERSON COUNTY

Humble Oil & Ref. Co.'s No. 1 McFaddin, T.&N.O. Sur. 234 .....Drlg. shale 6,631 ft.
Keith et al's No. 1 Reed-Hankamer .....Drlg. gumbo 4,402 ft.
The Texas Company's No. 4 Pipkin, Big Hill .....Shale with sand showing gas 5,686-90 ft.; cmtd. 9⅝-in. csg.

LIBERTY COUNTY

Hamm et al's No. 1 Harvard, Davis Hill .....Gumbo 1,015 ft.; shut down.
Tucker et al's No. 1 Bell, H.&T.C. Sur. No. 4 .....Gumbo 560 ft.; shut down.

MATAGORDA COUNTY

H. C. Cockburn's No. 2 Hawkins, Shepherd's Mott .....Set 47 ft. 4½-in. screen 5,221 ft.; tested salt water; preparing to deepen.
Empire Gas & Fuel Co.'s No. 1 Boker, Citrus Grove .....Total depth 6,295 ft.; sidetracking in shale 5,615 ft.

MONTGOMERY COUNTY

Lake Creek Oil Co.'s No. 1 Hunt, south of Conroe .....**Shut down 678 ft.; gumbo.**
Price & Wilhite's No. 2 Juerges .....

ORANGE COUNTY

Crew Oil Co.'s No. 1 Mansfield .....**Changing rigs 1,412 ft.**

POLK COUNTY

Freeman et al's No. 2 Freeman .....Drlg. shale 2,686 ft.

REFUGIO COUNTY

Blanco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 16, Bonnie View Ranch Subd. .....**Coring sand 3,770 ft.**

SAN JACINTO COUNTY

E. P. Edward et al's No. 1 Bannett, northwest of Cold Springs .....**Spudded and shut down.**

TYLER COUNTY

King Oil Co.'s No. 1 Caswell .....**Sand and shale showing oil 1,255 ft.; cmtd. 6-in. csg. 1,218 ft.**
Allied Pet. Co.'s (Texas Southern Pet. Co.'s) No. 3 Wilson, Mrs. E. Cherry Sur. No. 798, 1,500 varas from W line and 600 varas from N line .....**Drlg. rock 4,789 ft.**
Lew Wentz' No. 1 Long Bell, 300 varas E and 100 varas N from SW cor. James Seals Sur. .....Drlg. shale 2,963 ft.

VICTORIA COUNTY

Newton et al's No. 1 West .....Shut down 1,550 ft.
Lion Oil & Refining Co.'s No. 8-A McFaddin, M. Traviesa Sur., 925 ft. northeasterly on extended line from NE cor. of C. O. Edwards Sur. and 430 ft. N at right angles .....Tested salt water 3,840 ft.; abd.
Simpson-Fell and Westheimer et al, 2,200 ft. from SW line and 2,000 ft. from the NW line of S.A.&M.G. Sur. No. 4 .....Rig.
T. B. Slick estate's No. 1 McFaddin, J. Vairan Sur., 17,700 ft. NE along SE line from S cor. of survey and thence 5,050 ft. NW at right angles .....Spudded.
United Gas Corp.'s No. 1-B McFaddin, M. Traviesa Sur., 3,700 ft. E and 500 ft. N from NE cor. C. O. Edwards Sur. .....Tested salt water 3,893 ft.; abd.

WASHINGTON COUNTY

Penn-Tex Oil Co.'s No. 2 Kamas Brenham, S. M. Williams Sur. .....**Drlg. sand and shale 2,630 ft.**
Vegua Oil Co.'s No. 1 P. Graves, S. Clampet Sur. .....Rig.
Oliver Drlg. Co.'s No. 1-A Hahn, J. H. Alcorn Sur. A-3 ...Abandoned 1,885 ft.

WHARTON COUNTY

H. H. Givens' No. 3 Hudgins, I. B. Phillips Sur., 19 ft. W of No. 2 .....**No report; last reported drlg. gumbo and lime 1,430 ft.**

SOUTH LOUISIANA

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w .....Shut down 875 ft.
J. O. Davis' No. 1 Industrial, Sec. 29-9s-10w .....Set 6⅝-in. csg. with 172 ft. 6⅝-in. screen on bottom 6,568 ft.; drilled plug and bailed dry; standing.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w .....Shut down 3,258 ft.
Dr. Thomas et al's No. 1 John Hewitt .....Location.
Vacuum Oil Co.'s No. 1 Walt (D.D.), 225 ft. out of SE cor. Sec. 12-9s-7w .....Reset 1 jt. 7-in. screen in sand 5,001-08 ft.; tested slight show oil, gas and water; pulling tubing.

CAMERON PARISH

Vacuum Oil Co.'s No. 2 Cameron Meadows, 3,120 ft. S and 1,900 ft. W from NE cor. Sec. 21-14s-9w (500 ft. S No. 1) .....**Cleaned hole 3,015 ft.; preparing to resume drlg.**
The Texas Company's No. 7 State, Calcasieu Lake .....Location.

IBERIA PARISH

Jefferson Lake Oil Co.'s No. 11 Lake Peigneur, Jefferson Island .....Drlg. lime rock 875 ft.

IBERVILLE PARISH

Standard Oil Co.'s No. 1 Gay, Bayou Choctou .....Pulling liner and screen to deepen 4,174 ft.; tested small amount oil and water, sand 4,158-74 ft.
Standard Oil Co.'s No. 7 Wilbert, Bayou Blue .....Derrick.
Standard Oil Co.'s No. 9 Wilbert, Bayou Des Glaise, 700 ft. E and 760 ft. N of SW cor. SE SW Sec. 78-8s-8e..Drlg. gumbo 1,531 ft.
Standard Oil Co.'s No. 1 E. B. and S. P. Schwing, Bayou Blue .....Drlg. sandy shale 6,032 ft.
Standard Oil Co.'s No. 1 Baist Cooperage, Bayou Blue...Coring sand and shale 3,689 ft.

JEFFERSON DAVIS PARISH

A. V. Peters' No. 1 Smith Subd., Welsh, 1,050 ft. N and 180 ft. E SW cor. Sec. 22-9s-5w .....Drlg. shale 1,183 ft.

LA FOURCHE PARISH

The Texas Company's No. 2 L.L.&E. Co. (D.D.), 4,396 ft. S and 705 ft. E of the NW cor., Sec. 26-21s-22e ...Oil sand 3,598-3,623 ft.; cmtd. 4½-in. csg. 3,595 ft.; drilled plug and set screen.

PLAQUEMINES PARISH

Humble Oil & Ref. Co.'s No. 4 Cockrell-Moran, Lake Grand Ecaille, Sec. 14-20s-26e.....Location.

ST. JAMES PARISH

Convent Oil Co.'s No. 2 Jacobs, Sec. 28-11s-6e .....Abandoned 2,242 ft.

TANGIPAHOA PARISH

Joan Development Co.'s No. 1 Lake Superior, Sec. 20-5s-9e, 540 ft. E, 675 ft. N of SW cor. .....Temporarily abandoned 3,035 ft.

TERREBONNE PARISH

The Texas Company's No. 4 State, Caillou Island .....Abandoned location.
The Texas Company's No. 6 State, Caillou Island .....Drlg. hard sandy lime 4,120 ft.
The Texas Company's No. 1 La.L.&E., Bay St. Elaine ...Hard sand and lime 4,751 ft.; drill stem stuck.
The Texas Company's No. 6 State, Bay St. Elaine .....Abandoned location.
The Texas Company's No. 4 State, Dog Lake .....Drlg. 200 ft.
The Texas Company's No. 5 State, Four Isle .....Cap rock showing sulphur 530-66 ft.; cmtd. csg.
The Texas Company's No. 3 La.L.&E., Bay Junop .....Location.
The Texas Company's No. 4 La.L.&E., Bay Junop .....Location.
The Texas Company's No. 6 State, Lake Barre .....Rig.
The Texas Company's No. 8 State, Lake Barre .....Drill stem stuck 6,790 ft.; abd.
The Texas Company's No. 10 State, Lake Barre.....Location.
The Texas Company's No. 11 State, Lake Barre.....Location.
The Texas Company's No. 12 State, Lake Barre.....Location.
The Texas Company's No. 13 State, Lake Barre.....Capping piling.
The Texas Company's No. 14 State, Lake Barre.....Location.

VERMILLION PARISH

Pure Oil Co.'s No. 1 Alliance Land, Sec. 34-11s-1w, 2,600 ft. N and 300 ft. E of SW cor. section .....Moving in.

VERNON PARISH

Smith & Wier's No. 1 Delta, NE Sec. 14-2n-11w .....Drlg. gumbo 4,112 ft.

WEST FELICIANA PARISH

Putnam Syndicate's No. 2 Como Plantation, Sec. 51-1s-4w. Drlg. gumbo 943 ft.

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 40)

Ueckert et al's No. 1 Palfrey, 1,000 ft. S and W lines of farm .....T. D. 1,803 ft.; coring Edwards.
S. M. Terrell et al's No. 1 A. Beadom, 1,100 ft. from E line, 12,000 ft. from N line of John Barber Sur...Location abnd.
F. W. Tong's No. 1 Willie Sandemer, 150 ft. from NE and SE lines of the N 20 acres of Willie Sandemer 400-ac. tract, Juan Montez Sur. .....T. D. 1,260 ft.; temp. abnd.
Bowman & Waldrop's No. 1 Ridder, 1,000 ft. from S and W lines of 688-ac. tract, J. M. Sur. .....T. D. 600 ft.; temp. abnd.

CALDWELL COUNTY

Mills et al's No. 1 McMahon, 275 ft. SW line, 75 ft. SE line of tract, J. Pinchback Sur. .....T. D. 2,185 ft.; rigging up to deepen.
Neuhaus et al's No. 1 Moore, W. Clinton Sur. .....T. D. 2,515 ft.; abnd.
M. O. Rayor's No. 1 Dunlap, 150 ft. NW and NE lines of farm, Solomon Seal Sur. .....T. D. 2,225 ft.; drlg.

COMAL COUNTY

Caldwell & Lanier's No. 1 T. J. Byler, 175 varas from W line, 370 varas from N line of 320-ac. tract in the H.E.&W.T. No. 5,894 Sur. .....T. D. 600 ft.; set 8-in. csg.

DEWITT COUNTY

Gibson & Sturm's No. 1 Clark, Dolores Alderete Sur. ....Rigging up.

DUVAL COUNTY

O'Byrne et al's No. 1 Well, B.S.&F. Sur. No. 568 .....T. D. 1,830 ft.; repairing boiler.
Gus Pape et al's No. 1 Juan Benavides, Blk. 38, Mesquite grant .....T. D. 100 ft.; drlg.

EDWARDS COUNTY

Phillips Pet. Corp.'s No. 2 A. G. Holman, 320 ft. from N and E lines of SE of tract, C.C.S.D.&N.G.R.G. Sur. No. 25 .....T. D. 8,123 ft.; salt water; drlg.
James Dalgish's No. 2 Peterson, 850 ft. N line, 1,100 ft. W line of Sec. 82, Blk. E in the H.E.&W.T. Sur. ....Location abnd.

FAYETTE COUNTY

Elam & Reynolds' No. 1 Florence, M. Muldoon Sur. No. 13 .....T. D. 1,040 ft.; shut down.

FRIO COUNTY

A. H. Wray's No. 1 Burns estate, 700 ft. N, 330 ft. E of C Sec. 123, Antone Huzor .....T. D. 3,716 ft.; set csg.; waiting on cmt.

GOLIAD COUNTY

A. G. Riemenschneider's No. 1 A. T. Fromme, 275 ft. from N line, 912 ft. W line of 300-ac. tract, P. Dexeter Sur. .....T. D. 2,330 ft.; dropped till work is resumed.
Gibson Oil Co.'s No. 1 Cyrus Parks, 3,000 ft. S and 2,500 ft. E of NW cor. of Parks ranch, Ferguson Sur. .....T. D. 5,267 ft.; plugged back to 4,455 ft. and set and cmtd. csg.

GONZALES COUNTY

Linden Pet. Co.'s No. 1 Cowley, James Smith Sur. .....T. D. 4,720 ft.; 8 ft. in Edwards; drlg.
Weal Oil Co.'s No. 1 Martin, 360 ft. SE line and SW line of tract, Thomas Moore Sur. .....T. D. 4,695 ft.; drlg.

GUADALUPE COUNTY

O. K. Emerson's No. 1 C. A. Phillips, C of 80-ac. tract, Velda Sur. .....T. D. 75 ft.; dropped till work is resumed.
Schleyer, Atherton and Armstrong's No. 1 Ogletree, Robert Smith Sur. .....Rigging up.

HAYS COUNTY

J. C. Jones et al's No. 1 Byder, John Ingram Sur. .....T. D. 830 ft.; set csg.

JIM HOGG COUNTY

Magnolia Pet. Co.'s No. 1 Cuellar, Sur. No. 575 .....T. D. 3,200 ft.; drlg.
Peterman & Minahan's No. 1 Palacios, Sur. No. 231 ....T. D. 1,360 ft.; drlg.

JIM WELLS COUNTY

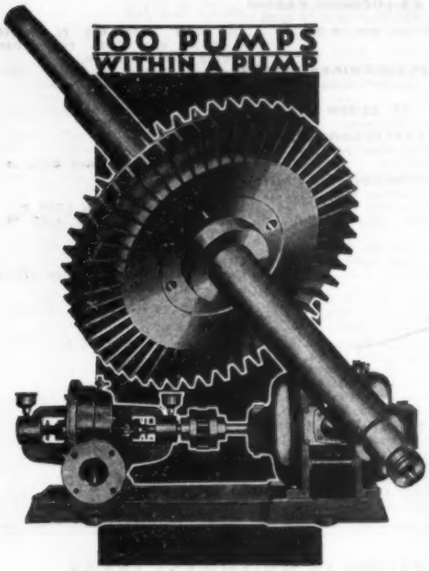
Carsil Oil & Gas Co.'s No. 2 McGill, 900 ft. due N of No. 1 in D. Baldwin Sur. .....Rigging up.
R. H. Ewell's No. 1 Doering, Blk. 6, Seefield Subd. .....T. D. 3,550 ft.; tested salt water; abnd.
Gulf Prod. Co.'s No. 3 Shaeffer, center of J. T. White Sur. .....T. D. 325 ft.; drlg.
Prairie Lee Prod. Co.'s No. 1 Oppenheimer ..... T. D. 1,000 ft.; shut down; waiting for heavier rig.
Smith Clark Co.'s No. 1 Cuero Cattle Co. .....Location.
Stewart & Blair's (E. W. Ogden) No. 1 Farris .....T. D. 2,123 ft.; standing.

KARNES COUNTY

Karnes County Development Co.'s No. 1 Hubbard, 3 miles W of Kennedy .....T. D. 1,310 ft.; drlg.

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. .....T. D. 1,010 ft.; shut down.
Sitton et al's No. 1 Garvin, C of NE of D. L. Richardson Sur., in the D. L. Richardson Sur., 1 mile NE from Kendalia .....T. D. 1,165 ft.; shut down.
Dixon Oil Co.'s No. 1 Ottmer Behr, W of H.T.&B.R.R. Sur., 3½ miles SE from Sisterdale .....T. D. 2,450 ft.; straightening hole.
Hicks et al's No. 1 Speck & Wiedner, Thomas Sur. No. 27, 2 miles S of Twin Sisters .....Location.
P. B. Sterling's No. 1 R. J. McCrocklin, 1,350 ft. from N line, 350 ft. from W line of the B. G. Owens Sur., 4 miles W from Kendalia .....T. D. 1,660 ft.; shut down.



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CONSTANT CAPACITY insured by multi-vaned impeller

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WESTCO PUMP CORPORATION *(name changed from Westco-Chippewa Pump Co.)*, Davenport, Iowa . . . *Branches:* New York, Chicago and San Francisco.
Representatives in 50 principal cities.

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R. M. Perkins' No. 1 J. Lawhorn, Sec. 10, 2,475 ft. E line, 1,438 ft. S line ..... T. D. 600 ft.; moving in new rig.
Permian Oil Co.'s No. 1 Taylor, Sec. 18, G.B.&C. Sur. .... T. D. 1,525 ft.; drlg.

KERR COUNTY

Evans & Gant's No. 1 Selker-Mears, C.C.S.D.&R.G.N.G. Sur. No. 1,805 ..... T. D. 1,365 ft.; drlg.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 38 ..... Rigged up and shut down.
B. M. Hatfield's No. 1 Westland, Blk. 23, Westland Subd. to Kerrville ..... T. D. 436 ft.; drlg.
Evans & Gant's No. 2 Jeff Love, SW cor. Sec. 1,593 ..... Rigging up.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 7,700 ft. N and W lines of F. Lotta Sur. ..... T. D. 850 ft.; standing.
Kamon et al's No. 1 Hodges ..... T. D. 2,512 ft.; shut down; hole full water.

LASALLE COUNTY

Fred W. Vales' No. 1 Coleman, 200 ft. from S and E lines of SW Sec. 514, B.S.&F. Sur. ..... T. D. 40 ft.; standing.

LIVE OAK COUNTY

Burke-Greis Oil Co.'s No. 1 West Ranch, James Vaughan Sur. ..... Location.
Houston Oil Co.'s No. 1 D. W. Snyder, 630 ft. from S line, 150 ft. from E line of Snyder tract, T. E. Garner Sur. ..... T. D. 5,386 ft.; temp. abnd.
Houston Oil Co.'s No. 1-A Parr, John McMullen grant.. T. D. 2,780 ft.; drlg.
Simpson Oil Co.'s No. 1 Wedding, 2 miles N of Three Rivers ..... T. D. 890 ft.; tested gas and salt water.
Illinois Exploration Synd.'s No. 1 Reeves-Brown, 1,300 ft. S of Sellers tract, 1,800 ft. E of Ry. ..... T. D. 2,145 ft.; standing.
Southern Exploration Co.'s No. 1 Ponder, B.S.&F. Sur., in eastern Live Oak ..... T. D. 4,139 ft.; tested salt water; drlg. deeper.
Sid Keoughan's No. 1 C. E. Terrell, 600 ft. from N line, 1,000 ft. from E line, Dan O'Boyle Sur. ..... T. D. 2,840 ft.; shut down.

LEE COUNTY

A. H. Wheeler and associates' No. 1 fee, Blk. 47, H. Donohue Sur. ..... T. D. 2,370 ft.; shut down.
C. B. Polk et al's No. 1 Stoltz, Hiram Donohue Sur. ..... T. D. 1,495 ft.; fishing.

McLENNAN COUNTY

C. E. Groone et al's No. 1 League ..... T. D. 1,220 ft.; shut down.

McMULLEN COUNTY

Belt Pet., Inc.'s No. 1 Martin, 150 ft. NW line, 150 ft. to SW line of E. Melon No. 212 Sur. ..... T. D. 28 ft.; standing.
Neuhaus et al's No. 1 J. O. Massey, Sur. No. 472 ..... T. D. 3,100 ft.; drlg.
Whall, Scherer et al's No. 1 Shiner, Henry Brewer Sur.... T. D. 1,200 ft.; standing.

MEDINA COUNTY

National Oil Co.'s No. 1 Howard, 1,750 ft. E of W line, 1,854 ft. N of S line of survey in the John George Sur. No. 9, 10 miles S of Dunlay ..... Plugged back to 1,625 ft.; may make small well; dropped from report.
J. H. Hickey's No. 1 Odon, H. Castro Sur. No. 175 ..... T. D. 820 ft.; shut down.
Donaldson Oil & Gas Co.'s No. 2 Adams ..... T. D. 130 ft.; standing.
C. H. Florian et al's No. 1 Henry Meyer ..... T. D. 200 ft.; standing.
Caldwell et al's No. 1 L. W. Burrell ..... T. D. 518 ft.; standing.
M. Eskridge et al's No. 1 Medina Valley Irrigation .... T. D. 1,550 ft.; shut down.
Pat Armstrong's No. 1 Crawford, 1,389 ft. N line, 2,550 ft. E line of survey, 487.6 miles W of Devine ..... T. D. 2,789 ft.; shut down.
Sunflower Oil Co.'s No. 1 Mofield, J. Brothag Sur. No. 532 ..... T. D. 1,212 ft.; standing.
Yancey Development Co.'s No. 1 Faseler Sur. No. 801 ... T. D. 1,050 ft.; drlg.

MILAM COUNTY

Dil-Tex Oil Corp.'s No. 1 Dilbeck, 450 ft. N and E lines of farm, Fernando Rodrigues Sur. ..... Rigging up.
Rheubotham & Tate's No. 1 Johnson, 325 ft. from N line, 250 ft. from W line of 40-ac. tract, D. Robinson Sur. ..... T. D. 2,100 ft.; shut down.
Red Bank Oil Co.'s No. 1 Foster, A. G. Berry Sur. ..... Derrick.
McMasters and Pomeroy's No. 1 Pluger, J. J. Acosta Sur.. T. D. 1,136 ft.; shut down.
Kyser, Roberts & Dibble's No. 2 Ward ..... T. D. 3,060 ft.; drlg.
J. E. McKee et al's No. 1 Littleton, 150 ft. from N and 225 ft. from W line of lease, C. Chevalier Sur. ..... T. D. 510 ft.; shut down.
Peggie Brothers' No. 1 M. Reed ..... T. D. 650 ft.; shut down.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 ..... T. D. 1,390 ft.; cleaning out cavings at 1,170 ft.
Gant-Kilgore and Evans' No. 1 A. D. Auld, C.C.S.D.& R.G.N.G. Sur. No. 23 ..... T. D. 2,200 ft.; drlg.

STARR COUNTY

Los Olmos Oil Co.'s No. 3 Kelsey-Bass, 433 ft. S line, 1,133 ft. W line, Blk. 6, Subd. Porcions 75, 76 and 77 ..... T. D. 407 ft.; comp. 3,000,000 ft. gas.
B. B. Tips' No. 1 F. Dayno, Lot 1, Porcion No. 81 ..... T. D. 212 ft.; drlg.
Willard Oil & Gas Co.'s No. 2 Kelsey-Bass, Sec. 8, Blk. 3, Porcion 76 ..... T. D. 493 ft.; drlg.
Menyard et al's No. 1 Sealbury, 150 ft. from E line, 6,550 ft. from N line, Share 5, Porcion 75, Jurisdiction of Carmargo ..... T. D. 349 ft.; waiting on cement.

SAN PATRICIO COUNTY

Aransas Oil Co.'s No. 1 Welder, 15 miles N of White Point ..... T. D. 3,663 ft.; set csg. after drill stem test showed gas.
George B. Pickett's No. 1 Baldwin, 900 varas due E of Denton, 1,200 ft. S of the SE cor. of O'Neill Sur., Abstract 211 ..... T. D. 4,020 ft.; shut down.
Saxet Oil Co.'s No. 1 Carroll, 8 miles N of Gregory .... Derrick.

TRAVIS COUNTY

Fort Bend Oil Co.'s No. 1 Engleman, 450 ft. N line, 150 ft. W line of 108-ac. tract, J. H. Denson Sur. .. T. D. 1,800 ft.; shut down.
F. W. Fuchs' No. 1 Ballersted, A. Alexander Sur. ..... Derrick.
Franklin et al's No. 1 Wilson, A. Alexander Sur. ..... Derrick.
Waldron et al's No. 1 Cook, D. H. Minor Sur., 8 miles SW of Austin ..... T. D. 645 ft.; drlg. shale.
Taylor Temple Oil Co.'s No. 1 W. Smith, L. Kimbro Sur... T. D. 660 ft.; set 6⅝-in. csg.
Bohls & Wilson's No. 1 Norton, J. Cole Sur. ..... Derrick.

WEBB COUNTY

Cole Pet. Co.'s No. 4 Benavides, Sur. No. 1,601 ..... T. D. 1,052 ft.; drlg.

WILLIAMSON COUNTY

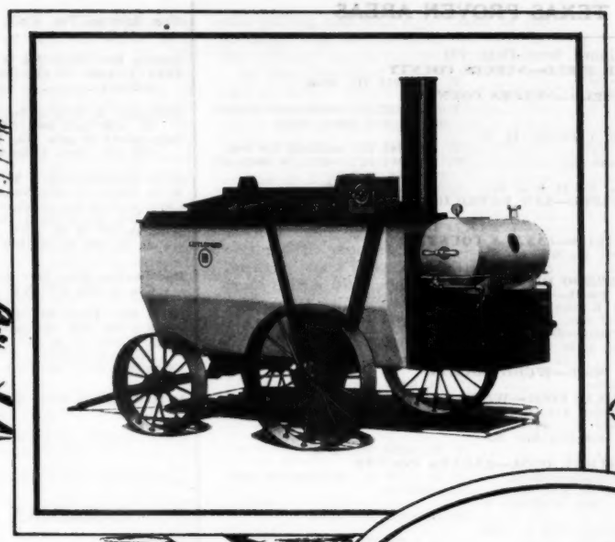
Fritz Fuchs' No. 1 L. W. Fuchs, Cartwright Sur. ..... T. D. 2,160 ft.; drlg.
Wilburn et al's No. 1 Caroline Hurts, P. Coursey Sur. .... T. D. 1,327 ft.; shut down.
Wilson et al's No. 1 Walker ..... T. D. 2,260 ft.; shut down.

WILSON COUNTY

A. M. Blume's No. 1 Nickolson, C. Diaz Sur. ..... Location.
Stover & Wren's No. 1 John Ruess, 10,400 ft. from SW line, 2,300 ft. from NW line, O. A. Trevino Sur. No. 19 ..... T. D. 1,100 ft.; shut down.

ZAPATA COUNTY

T. H. Ward's No. 1 Uribe, 150 ft. NW line, 150 ft. SW line, Blk. 8 Subd., Share 7, Partition No. 6, T. Uribe Partition of Jose V. Borrego Sur. ..... Rigged up and standing.
Benson Oil Co.'s No. 1 S. Vela, W cor. of Blk. 12, Sur. No. 259 ..... T. D. 1,292 ft.; drlg.
Bill Henry et al's No. 1 Gopher Trust estate, Borrego grant ..... T. D. 1,398 ft.; drlg.
Penny Prod. Co.'s No. 1 Juan V. Cuellar, Jr., et al, 175 ft. NE line, 175 ft. SE line Poppas Subd., Porcion 33 and 34, Blk. 1, Sur. 2 ..... T. D. 2,075 ft.; drlg.
National Oil Co.'s No. 1 Zapata Trust Estate, 617 ft. NW line, 96 ft. NE line, Blk. 97, De Prom Subd., Porcion 6 ..... T. D. 690 ft.; drlg.
National Oil Co.'s No. 2 Adams, 150 ft. from NW line and SW line, Blk. 11, Borrego grant ..... T. D. 1,148 ft.; standing.
Mackenzie & Talmadge's No. 1 Trevino, 400 ft. SE line, 200 ft. NE line, Blk. 6, Sur. No. 4, Porcion 2 and 3 ..... T. D. 520 ft.; standing.



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The Two-Wheeled "Hot Dope" Kettle, made in 110, 165 and 210 gallon capacities. This is an excellent maintenance kettle and just the outfit for coupling coating. It can be fitted with dial type thermometer. Complete information sent on request.

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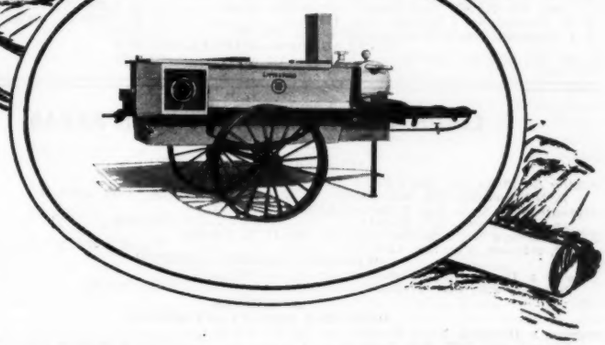

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LITTLEFORD KETTLES SINCE 1900

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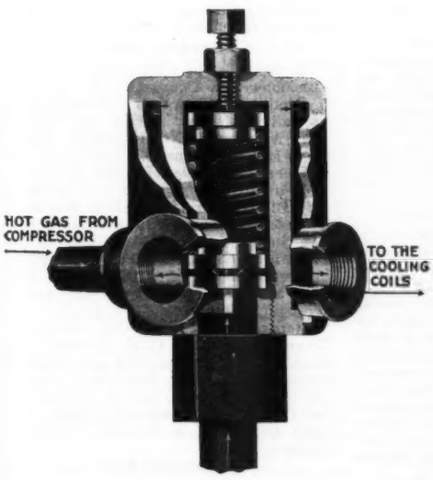
The House of Courteous Service



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Non-Freezing
HIGH PRESSURE RELIEF VALVE

This valve is designed to eliminate trouble caused by frost collecting around the ordinary valve. *Write for detailed information.*

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An advertisement in our CLASSIFIED SECTION will prove conclusively that this is a means of turning your used equipment into silver dollars.

The Oil and Gas Journal
Tulsa, Oklahoma

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 40)

AGUA DULCE FIELD—NUECES COUNTY

Houston Oil Co.'s No. 1-B Ollie Purl ..... T. D. 6,610 ft.; drlg.

BAXET FIELD—NUECES COUNTY

O. C. Best et al's No. 1 Boory ..... T. D. 4,037 ft.; estimated 40,000,000 ft. dry gas.; comp.

Houston Oil Co.'s (Andy Bowen) No. 1 Prieur, H. B. Sheppard Sur. ..... T. D. 1,465 ft.; waiting for csg.

Moody-Seagraves' No. 1 Sedgwick, Dunn Sur. ..... T. D. 4,097 ft.; comp. 70 bbls. oil, 300 bbls. water.

W. L. Pearson Properties' No. 1 Dunn, 300 ft. S of Bay.. Shut down 2,690 ft.

WHITE POINT FIELD—SAN PATRICIO COUNTY

United Production Co.'s No. 3 Cage ..... T. D. 3,035 ft.; drlg.

Saxet Oil Co.'s No. 4 White Point ..... T. D. 4,350 ft.; drlg.

PRYOR FIELD—ZAVALA COUNTY

Texas Gas Utilities' No. 4 Pryor, 1,000 ft. NW of No. 3 Pryor ..... Location.

LAREDO DISTRICT

KOHLER POOL—DUVAL COUNTY

Humble Oil & Refining Co.'s No. 50 Kohler, 2,805 ft. from S line, 165 ft. from W line of Sur. 164 ..... T. D. 5,971 ft.; drlg.

COLE POOL—DUVAL COUNTY

Southern Oil Co.'s No. 2 Kings-Harper, 1,794 ft. E line, 729 ft. N line of Sur. 323 ..... Location.

REISER POOL—WEBB COUNTY

O. W. Killam's No. 1 Johnson, Sur. 1,617 ..... T. D. 2,900 ft.; abnd.

CAROLINA-TEXAS POOL—WEBB COUNTY

George S. Marshall's No. 1 C. W. Webster, 810 ft. from S line, 150 ft. from W line, Sur. 684 ..... T. D. 3,000 ft.; drlg.

Carolina-Texas Oil & Gas Co.'s No. 9 Barnsley Sur. No. 268 ..... T. D. 1,900 ft.; drlg.

JENNINGS-MUCKELROY POOL—ZAPATA COUNTY

O. & A. Co.'s No. 3 Garcia, Share 3, Fansler's Subd. .... T. D. 1,218 ft.; waiting on cmt.

E. C. Brogan's No. 1 Montemeyor, Blk. 11, Sur. 64 ..... Spudded in.

C. W. Killam's No. 5 A. Bustamente, Blk. 7, Share 5, Fansler's Subd. ..... T. D. 1,451 ft.; abnd.

Nordan & Morris' No. 1 Jose Bustamente, 750 ft. NE line, 200 ft. NW line, Share 35, Comitas grant..... T. D. 1,326 ft.; coring.

P. H. Meyers' No. 1 Trevino, Sur. 412 ..... T. D. 1,800 ft.; drlg.

J. I. Newton's No. 3 Trevino, Blk. 7, Sur. No. 66 ..... Location.

CUELLAR POOL—ZAPATA COUNTY

O. W. Killam's No. 40-C Cuellar, Sur. No. 278 ..... Derrick.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 38)

Sabine Royalties Co., Inc.'s No. 1 Hill, 400 ft. S, 200 ft. E, NW cor. NE NE, Sec. 5-7-11 ..... Set 6-in. 2,230 ft.

Triangle Pet. Co.'s No. 2 Sabine Lbr. Co., 330 ft. N and E, SW cor., Sec. 36-8-12 ..... Derrick.

J. C. Walton's No. 1 Sabine Lbr. Co., 300 ft. S, 300 ft. W, NE cor. NW, Sec. 11-7-12 ..... Tested 3,376 ft; S.O; W.O.

WEBSTER PARISH—SARREPTA

Cassidy & Davis' No. 1 Nickerson, 300 ft. S, 300 ft. W, NE cor. SW, Sec. 29-23-10 ..... S.D. 150 ft.

ARKANSAS

OUACHITA COUNTY—STEPHENS

Wesson & Bonner's No. 1 Wesson, 500 ft. W, 175 ft. N, SE cor. SW NW, Sec. 32-15-19 ..... Trying to shut off wtr. flow.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 2 Furlough, 408 ft. N, 192 ft. E, SW cor. NW NE, Sec. 12-17-14 ..... Flowed 719 bbls. in 14 hrs; went dead; W.O.S.R.

UNION COUNTY—EL DORADO

Lion O. & R. Co.'s No. 9-A G. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15 ..... Rig up.

Rice Drlg. Co.'s No. 1 Watley, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... S.D. funds; T.D. 2,186 ft.

Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 ..... S.D. 2,608 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13 ..... Location.

Marine Oil Co.'s No. 4-B Thompson, Sec. 10-18-13 ..... 6-in. csg. 3,574 ft; cored 2-ft. sand 3,576 ft.

EAST TEXAS

HARRISON COUNTY

Calatex O. & G. Co.'s No. 6 Argus, 755 ft. N, 699 ft. W, Mile Post 27, in J. Womack Sur. ..... Location.

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 13 Louis Werner, 1,590 ft. S, 600 ft. W, SE cor. Carrie Steele tr., B. C. Jordan Sur. ..... Set 7-in. 4,650 ft.

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur. .... S.D. 2,600 ft.

Dillon & Bradham's (was W. G. Banks et al's) No. 1 C. O. Baldwin, 1,395 ft. W, 1,362 ft. S, NE cor. Baldwin 290 ac. in Hampton West Sur. ..... S.D. 1,555 ft.

S. E. Bell et al's No. 1 Burnett Lbr. Co., C, S. B. Hendricks Sur. ..... S.D; W.O. 3,335 ft.

C. D. Neff et al's No. 6 Brumble, B. C. Jordan Sur. .... Derrick.

United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse. in B. C. Jordan Sur. ... Location.

MISSISSIPPI

HINDS COUNTY

Cleve Love et al's No. 2 Ridgeway-McGhee, SE cor. NW, Sec. 2-5-1e ..... Derrick.

Pirtle & Flint's No. 1 Payne, 450 ft. W, 50 ft. N, SE cor. SW SW, Sec. 27-6-1e ..... S.D; W.O. 2,562 ft.

RANKIN COUNTY

Miss. G. & F. Co.'s No. 1 Hanna, SW cor. SW NE, Sec. 14-5-1e ..... Derrick.

Pioneer O. & G. Co.'s No. 1 Ragland, NE cor. SW SW, Sec. 12-5-1e ..... Topped black shale 2,296 ft; set 6⅝-in. 2,370 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

CLARK COUNTY

Company, farm and location—	Remarks:
Gulf Ref. Co.'s No. 1 Box, 526 ft. W, 493 ft. N, C, SE, Sec. 11-2n-15e	Drlg. chalk 3,290 ft.

CLAY COUNTY

(Cable tools)

Ohio Oil Co.'s No. 1 Cantrell, NE cor., Sec. 16-16-5	Drlg. 3,375 ft.

HINDS COUNTY

Attkisson & Dyer's No. 1 Downing et al, SE NE, Sec. 27-6-1	Washing to bottom 320 ft.
Cane River O. & G. Co.'s No. 1 Kabbles, NE cor. SW SW, Sec. 15-5-1e	Waiting on cmt. 3,297 ft.
Howard Oil Co.'s No. 1 Jackson College, C NW NW, Sec. 9-5-1e	S.D. 74 ft.
Industrial G. & E. Co.'s No. 1 Ill. Central R.R., 2,400 ft. E, 100 ft. S, C, Sec. 4-5n-1e	Rigging up to resume drlg.
Southern Pet. Co.'s No. 1 Wilson (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 28-6-1e	S.D. 20 ft; W.O.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keys, C NW NE, Sec. 2-12-9	Reaming to bottom 1,153 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19	S.D. 3,015 ft.
Park Bowser et al's No. 1 Cowart, second hole, Sec. 2-12-19	S.D. 1,987 ft.

RANKIN COUNTY

Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e	Derrick.
Grandstaff et al's No. 1 Carr, 2,780 ft. W, 550 ft. N, SE cor., Sec. 12-5n-1e	Began drlg. Apr. 5; set 10-in. at 60 ft.
J. T. Hester's No. 1 Ellis, Sec. 12-5-1	Cmtd. 6⅝-in. 2,375 ft.
R. A. Moore et al's No. 1 Interior Lbr. Co., Sec. 28-6-1e	S.D. 900 ft.
Cleve Love's No. 1 Muse, SE cor. SW SW, Sec. 32-7-4e	S.D. 3,100 ft.
Love Pet. Co.'s No. 1 Interior Lbr. Co., Sec. 28-6n-2e	S.D. 867 ft.
Millstein O. & G. Co.'s No. 1 Gammill-Hartzfield, 400 ft. E, 400 ft. N, SW cor. SW SE, Sec. 6-5-2e	Dry and abd. 2,501 ft.

SMITH COUNTY

Pocahontas Nat. Gas Co.'s No. 1 Adams-Banks Lbr. Co., C NE SW NW	Dry and abd. 3,519 ft.

WARREN COUNTY

Dixie Pet. Co.'s No. 1 Henry, 1,375 ft. W, 330 ft. N, SE cor. NE, Sec. 36-17-4, of Choctaw Div. on Lot 2..	Rigging up.
Eagle Lake O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2	Rigging up.
Vicksburg O. & G. Co.'s No. 1 Dornbush, Sec. 8-18-5	S.D. 1,320 ft.

WINSTON COUNTY

Miss. Drlg. Co.'s No. 1 Scarbrough, NW cor., Sec. 15-12-14	Drlg. 2,645 ft.

YALOBUSHA COUNTY

Collett-Carter Oil Co.'s No. 2 Blackmur, 990 ft. W, 285 ft. N, C, Sec. 14-11-4	Fishing 2,960 ft.

CANADIAN FIELDS

(Continued from Page 44)

& Development Corp.'s No. 3, LSD 6, is drilling 210 feet in the lime at 5,412 feet with slightly increased wet gas production.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, which has been off production, will be completely reconditioned this spring.

In the north end of the field, Richfield Petroleums' No. 2, LSD 12-13, Section 13-20-3w5, is reported drilling in the lime at 4,770 feet. About 500,000 feet of gas was encountered in the Home and Dalhousie sands above the lime.

Homestead Operations

Shareholders of Homestead Oils, Ltd., held their annual meeting at Calgary, when the following directors were elected: President, A. C. Burdick, Victoria; vice president, A. T. Goward, Victoria; managing director, R. F. Castle, Victoria; secretary-treasurer, J. S. Bowron, Calgary; directors, D. M. McDaniels, Calgary; K. C. Allen, F. R. Troop, W. L. McIntosh, Victoria; John Hart, F. R. McDonald, Vancouver. Homestead's No. 1, LSD 5, Section 16-19-2w5, in South Turner Valley, had a production of 1,697 bbls. in March. No other drilling is being done at present, though the company holds 4,000 acres on the Lethbridge structure, 30 acres in South Turner Valley and 160 acres in the Red Coulee Field.

Waite Valley Test

On the Waite Valley structure, west of Turner Valley, Calgary Development & Production Corp.'s No. 1, LSD 10, Section 21-19-3w5, is reported pulling 6⅝-inch casing following a production test at 5,010 feet. It is reported fair oil and gas shows were met in the lime. The test is variously reported to have got the lime at 3,834 and 4,160 feet, and was the first test on the Waite Valley structure to encounter the Madison.

Drilling in the Foothills

On the Moose Dome, Moose Oils' No. 1, LSD 16, Section 29-22-6w5, is temporarily shut down after partially sidetracking tools lost at 2,835 feet. Owing to difficulty in cleaning out the well, an attempt may be made to finish it with a diamond drill outfit. At the present depth it is through the Madison and about 2,185 feet in the Devonian lime, shows of oil and gas having been met at various horizons in the course of drilling.

On the Monarch structure west of Olds, Cartier-Majestic's No. 1, LSD 3, Section 36-31-7w5, is reported spudded in.

In the Pincher Creek area, work has been resumed on Weymarn Petroleums' No. 2, LSD 5, Section 7-6-1w5, by Alberta Pacific Consolidated Oils, Ltd., of Calgary. The test is now reaming to bottom preparatory to making new hole from 2,476 feet and is stated to have a wet gas flow of around 1,250,000 feet a day.

Alberta Pacific Tests

In the Border fields Alberta Pacific Consolidated's No. 1 on the Spring Coulee structure, Section 15-4-23w4, is drilling out cement after cementing 8¼-inch casing in the top of the lime horizon at 5,935 feet. Before running casing, the test had been drilled through a 35-foot sand, the production of which is now being tested. It is not positively known whether the lime formation encountered is the Madison or an overlying formation, but if commercial production is not developed at the present depth, the hole will likely be carried somewhat deeper. The test was carried to 5,000 feet by Alberta Pacific Consolidated Oils, Ltd., and deepened as a joint test by that company and Frontier Developments, Ltd., a subsidiary of Canadian Exploration Co. of Denver. The acreage was originally held by the Frontier company, Alberta Pacific Consolidated securing a half interest in exchange for drilling the 5,000-foot test.

In the Shank Lake district, southern Alberta, Nordon Corp. and Parco Oil & Gas Co. are reported drilling further structure tests.

Red Coulee Field

On the Alberta end of the Red Coulee structure, Vanalta Oils' No. 4, Section 4-1-16w4, has finished at 2,489 feet with a production estimated between 80 and 100 bbls., and looks like the best producer yet drilled in the Alberta end. It got some gas in the Sunburst sand and oil in the top of the Vanalta sand at 2,448 feet, production increasing till at 2,489 feet the oil was flowing over the casing. The well was brought in under perfect control and practically all the oil went to the storage tanks.

Ribstone Field

In the Ribstone Field, eastern Alberta, Commonwealth-Algonquin's No. 2, LSD 5, Section 16-45-1w4, is reported rigging up, all equipment having been moved from Algonquin's No. 1, LSD 1, Section 20-45-1w4, abandoned at 2,305 feet. No. 2 is closer to the Meridian producers. It is unofficially reported that Hudson's Bay Oil is locating a test in Section 8-45-1w4. Cardium Syndicate has a location in Section 16-45-1w4 and British Permanent Oils' No. 1 has been spotted in Section 4-46-1w4. Temple Oils, Ltd., of Seattle, has secured acreage and is arranging for a test.

Storage tanks are being erected at Rivercourse, on the C. P. R. and in the Meridian area of the field and pumping equipment is being installed to handle the crude oil which will be delivered to the C. P. R. for locomotive fuel. Ribstone Oils, Ltd., is handling these operations.

Wainwright Field

In the Wainwright Field, east central Alberta, Fabyan Petroleums, Ltd., is reported arranging for three tests this season. One will be drilled by the company and two by other companies on a royalty basis.

Manitoba Drilling

In the Manitou district, southwestern Manitoba, Commonwealth Petroleums' No. 1 is reported to have encountered a gas flow, estimated 1,000,000 feet, at 1,200 feet. It will probably be finished at this depth and No. 2 test started, using gas from No. 1 as fuel. Gas will be developed and, if a sufficient supply

is secured, marketed to nearby towns, and possibly to Winnipeg.

A Winnipeg syndicate has secured from the city of St. Boniface an option on some 400 acres near the junction of the Seine and Red Rivers. This is acreage not under the control of the province of Manitoba.

Drilling in Saskatchewan

On the Pilot Butte structure in southern Saskatchewan, 10 miles east of Regina, Aladdin Oil & Gas Co.'s No. 1, Township 17-18w2, is reported drilling in the Colorado shales at 2,160 feet and production is thought possible at the base of the Colorado. Pat Adams' heavy duty rotary outfit from Turner Valley is being used, and the test is financed to go to 4,000 feet or more.

Hudson's Bay Tests

In the Keho Lake district, southern Alberta, Hudson's Bay Oils' No. 1 Keho, LSD 2, Section 17-11-22w4, is reported drilling at 3,355 feet in cement run to overcome caving.

In the Castor area, Hudson's Bay's No. 1 Paintearth, LSD 5, Section 27-39-15w4, is drilling below 3,900 feet after setting casing at 3,628 feet.

Drilling in Ontario

In the Dawn Field, Lambton County, Union Natural Gas Co.'s No. 57, SE, Lot 15, Concession 2, Dawn Township, finished a dry hole at 1,896 feet after striking salt water at 1,875 feet, and is being pulled and plugged. Union's No. 58, SW, Lot 11, Concession 1, Dawn, is moving rig from No. 57. Union's No. 59 will be located in about a week.

In the D'Clute Field, Kent County, American Engineering Co.'s No. 4, Simpson farm, Lot 148, South Talbot Road, Raleigh Township, is reported a dry hole at 1,585 feet. It had a small show of sweet gas at 1,430-35 feet and may be deepened to the Trenton.

Dr. Luke Smith of Oakville is leasing acreage for oil and gas in Raleigh, Harwich, Howard and Chatham Townships.

In Mosa Township, Middlesex County, Southern Ontario Gas Co. is reported to have spotted its No. 8 test in Lot 14, Concession 3, not far from No. 7 producer, which is rated good for 2,250,000 feet with 910 pounds rock pressure. Outfit from No. 7 is being moved to the new location.

In the Haldimand-Norfolk Field, Union Natural Gas Co. is continuing development with four strings of tools. Drilling contracts are being handled by Hoover & May and Donald & Hoover. Of the recent wells No. 189, N half, Lot 18, Concession 5, Woodhouse Township, Norfolk County, finished between 950 and 960 feet as a small gasser, good for 28,000 feet. No. 190, NE, Lot 21, Concession 7, Walpole Township, Haldimand County, finished as a gasser in the Red Medina at about 801 feet with 140,000 feet. No. 191, Lot 14, Concession 5, Walpole Township, secured 160,000 feet in the Red Medina.

On the Six Nations Indian Reserve, Brant County, Petrol Oil & Gas Co. of Toronto has finished No. 45 with shallow gas production approximately 45,000 feet. The company has 28 producers connected and five not yet connected.

GULF COAST FIELDS

(Continued from Page 42)

feet but plugged back to the sand, in which two joints of 4½-inch screen was set, this being run through 6⅝-inch screen hung at 3,850 feet. After setting the well blew in without washing making dry gas at first with working pressure of 1,500 pounds through a quarter inch choke. Gravity of the oil is 31 degrees (corrected for temperature), temperature of the well being 63 degrees.

Previous production at Sorrento has been limited to the top of the cap rock area, in which four producing wells have been completed at depths ranging from 1,640 feet to 1,660 feet. The flank sand discovery well is located approximately 2,500 feet to the north of the cap rock pool, in which only one well at present is producing. The completion of No. 19 United Land Co. follows a number of unsuccessful attemps to find flank production not only on the north but also on the west and the south sides. This well is 600 feet north of No. 17, which was abandoned in salt at 5,228 feet, which in turn was due north of No. 16, abandoned in salt at 3,420 feet. On the south, No. 14 was abandoned in cap at 4,075 feet and No. 15, the farthest south, in heaving shale at 5,700 feet. On the west, the deepest test was No. 11, abandoned in cap at 3,437 feet. Other drilling has been pretty well centered around the top of the dome.

Sorrento is a geophysically discovered dome, on which Gulf Refining Co., the sole owner, has been carrying on a consistent, conservative development program since late in 1927. The discovery well, No. 4 United Land, was completed in February, 1928, making 4,000 bbls. daily. No other well, however, has made such a favorable showing. Sorrento is the only coastal field east of the Mississippi River.

FAILURE AT LAKE BARRY

HOUSTON, Tex., Apr. 20.—The first failure on the Lake Barre Dome, in the coast marshes of Terrebonne Parish, Louisiana, since the first test drilled, was chalked up the past week by The Texas Company in its No. 8 State which was abandoned with drill stem stuck at a total depth of 6,790 feet. The first test, No. 1 State, drilled to prove the dome, found salt and was quit at 820 feet but since then six producing wells have been completed in succession.

TWO IN PIERCE JUNCTION

HOUSTON, Tex., Apr. 20.—Gulf Production Co. completed two wells at Pierce Junction, Harris County. Its No. 1 Manchester, southwest corner of Lot 8, Armstrong Subdivision, B.B.B.&C. Survey No. 1,028, northwest flank of the dome, came in flowing 1,200 bbls. daily from sand at 4,835 feet. It had been deepened from sand at 3,720 feet, where it had been completed previously as a 500-bbl. well. No. 32 Taylor, east flank of the dome, was deepened to 4,778 feet and completed as a 300-bbl. well.

NEW TEST IN FORT BEND

HOUSTON, Tex., Apr. 20.—H. R. Cullen has made location for a deep wildcat in the eastern part of Fort Bend County. This is No. 1 Lockwood, 475 varas from the west line of the east half of the John Rabb Survey, and 1,245 feet from the north line.

GOOD WELL AT VINTON

HOUSTON, Tex., Apr. 20.—Wilson-Broach's No. 8 Wilson, 50 feet north and 379 feet east of the SW cor. SE NE, Section 33-10s-12w, north extension area of Vinton, Calcasieu Parish, has been completed pumping 310 bbls. daily from sand at 3,180 feet with 44 feet of screen.

SOUTHWEST TEXAS FIELDS

(Continued from Page 40)

where a few wells have been completed in this new sand about 100 feet deeper than the average in the rest of the field.

O. W. Killam abandoned at 2,900 feet his No. 1 Fee in Survey 1,617, Block 4, in the old Reiser district in Webb County and abandoned his No. 5 A. Bustamente in Block 7, Share 5, of Fansler's partition to the Comitas grant at 1,451 feet.

Houston Oil Co. tested a little showing of gas in its No. 3 Wormser in northwestern Brooks County at 4,502-15 feet but not enough to be of consequence and is drilling at last reports below 4,700 feet.

Humble Oil & Refining Co.'s No. 50 Kohler in Duval County at the north end of the Kohler Field is down 5,970 feet and continuing to drill. It is the deepest hole in the Laredo district.

Other tests in the Laredo district have made considerable hole but have encountered nothing interesting.

Miscellaneous Operations

Linden Petroleum Co.'s No. 1 Cowley in Gonzales County is to be abandoned at 4,731 feet where it is 22 feet in the Edwards and dry.

In Goliad County, T. B. Slick's No. 1 Reidel is last reported at 4,431 feet and still drilling and still dry. Sand in the discovery well was at 4,212 feet and the No. 1 Reidel has had nothing but shale.

In the Kerr-Real area the tests are drilling hole. Evans & Gant and their associates are drilling all the tests. The No. 1 Dan Auld in Real County is down 2,360 feet and deep enough that more interest will be taken in it from now on. It was at 2,552 feet that the No. 1 Love in Kerr County got its first oil. The No. 1 Seiker & Meyer in Kerr County is down around 1,350 feet, having made only a little progress since the week before, and No. 1 Haby in Real County has made only a little additional depth.

Southwest Texas

Average daily production week ending April 18:

Agua Dulce	23
Bexar County	358
Branyon	29
Bruner	12,336
Buchanan	98
Chapman	4,467
Dale	332
Darst Creek	20,326
Goliad County	33
Kingsville	114
Larremore	22
Luling	8,958
Lytton Springs	726
Manford	140
McMullen County	20
Medina County	32
Minerva	404
Mirando district*	13,380
Pettus district	7,311
Saxet	379
Somerset	1,376
Thrall	35
White Point	41
Yoast	215
Total Southwest Texas	71,146
Week ended April 11	68,611
Increase	2,535

*Includes Charco-Redondo, Jennings and Mirando Valley of Zapata County; Albercas, Aviator, Caroline-Texas, Mid-O-Juelos, Schott and Wolcott, Webb County; Alworth, Henne-Winch-Farias and Randado, Jim Hogg County; Cole, Driscoll, Kohler, Schoolfield-O'Byrne and S.R.C.-Vacuum of Duval County; Mount Lucas, Live Oak County.

MICHIGAN FIELDS

(Continued from Page 48)

formation was successfully shut off in this well this week and it is nearing the red rock, first accurate marker in Michigan fields.

Territories much farther north of Muskegon in Mason County, about 50 miles, and in Charlevoix, Antim and other counties as much as 200 miles north, new interest also has been aroused.

Application for a permit to drill the sixth well in Mason County has been filed by M. I. Diamond of Chicago. It will be located on property owned in fee and located NE SW, Section 15-2n-17w, Grant Township, Mason County.

One permit for a new location was issued to the Pure Oil Co. This well will be the Pure company's No. 7-B State-Isabella, N half SE, Section 2-14n-3w, Chippewa Township, Isabella County.

About 15 rigs are running in the Mount Pleasant area in central Michigan and another 10 are at work in other sections of the State.

KANSAS FIELDS

(Continued from Page 36)

has been completed for 38,000,000 feet of gas in chat 2,895-2,920 feet. W. C. McBride, Inc.'s No. 1 Gustafson, C NW NW, Section 12-19-2w, has been completed for 512 bbls. in 12 hours from chat 2,929-67 feet. Lario Oil Co. and Shell Petroleum Corp.'s No. 1 Sellers, SW cor. NE, Section 31-19-1w, made 21,268,000 feet of gas in chat 2,938-42 feet.

Morton County

Sidwell & Kuhns' No. 1 Ferguson, C SE, Section 9-34-39w, made 10,500,000 feet of gas from sand 2,615-2,702 feet.

Sedgwick County

Magnolia Petroleum Co.'s No. 4 Wheeler, NE cor. NW SE NE, Section 19-27-2, has been completed for 700 bbls. in chat 2,943-58 feet.

Stevens County

Texas Interstate Pipe Line Co. and others' No. 1 Phillips, C NW, Section 1-34-38w, has been completed for 10,000,000 feet of gas in sand 2,610-2,780 feet.

OKLAHOMA FIELDS

(Continued from Page 34)

and two locations. The Utilities Producing Co.'s No. 1 Cotcher, SW cor., Section 9-7-18, was completed for 4,500,000 feet of gas from sand at 1,739-2,040 feet. Same company's No. 2 Carney, CNL NE NW, Section 9-7-18, was a new location. Choctaw Gas Co.'s No. 1 Lovier, NE cor. SE NE, Section 8-7-18, was spudding.

Western Operations

In the Oklahoma Panhandle, Argus Production Co.'s No. 1 Greenwood, C NE, Section 24-4n-13ecm, was a new location. The test is being drilled in what is believed to be the south end of the Hugoton gas field, which extends over into Stevens County, Kansas. The company has already completed two other gas wells in the county.

Magnolia Petroleum Co.'s No. 1 Roberts, SE cor. NE SE, Section 21-21-2w, near Perry in Noble County, was drilling in shale at 5,045 feet, within a few feet of the pay horizon. Same company's No. 1 Hoffman, SW cor. SE SE, Section 16-21-2w, was spudding. Same company's No. 2 Young, NW cor. SW NW, Section 22-21-2w, was drilling at 3,350 feet.

Gasser in Latimer County

A wildcat test in Latimer County in the eastern part of the State was completed for 8,000,000 feet of gas. Limestone Oil & Gas Co.'s No. 1 Kirkpatrick, SE cor., Section 16-5-18, in the Wilburton area, found 8,000,000 feet of gas in sand at 2,702-2,811 feet with 800 pounds rock pressure.

New Sand in Caddo County

Another well finds a showing of oil in an unidentified sand in the Cement Field, in Caddo County. Mid-Kansas Oil & Gas Co.'s No. 6 Preston-Culp, NW cor. NE NE, Section 6-5-9w, on the west edge of the Cement area, cored a sand from 6,047-76 feet, and found a shale break to 6,086 feet and was coring in sand again. It was later shut down at 6,097 feet in lime.

Geologists are undecided what to call the new horizon, but the fossils indicate the sand is the Pennsylvania series. No one as yet is willing to correlate the sand with any of the producing horizons in the Oklahoma City Field. Other tests have found pay horizons at 4,060-80 feet, with oil production. Another sand was found at 3,200-3,300 feet. No more oil or gas showings were found in the test below 6,076 feet.

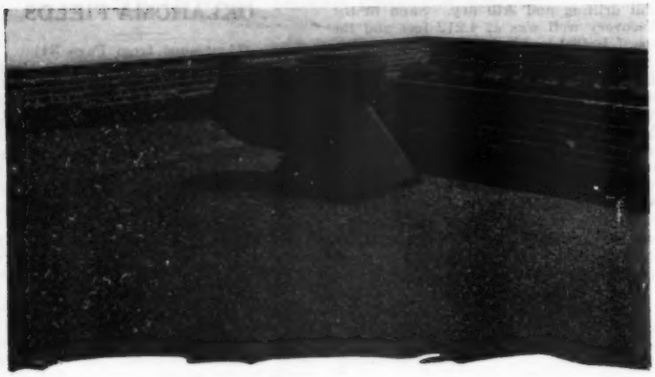
Deeper drilling for Grady and Caddo Counties is expected to be the next major development upon the return of normal times in the oil industry. The Chickasha gas field and the Cement oil field are producing from the shallow horizons with the exception of a few wells in the Cement Pool, which found oil and gas below 4,000 feet, indicating the possibilities in the deep horizons.

Geologizing Western Counties

Considerable geological work has been under way in these counties for several years and the major oil companies have leased large blocks of acreage on which wildcat development is expected to take place. Some express the opinion the area is similar to the Oklahoma City Field, where the upper sands were found productive.

In the Cement Field the deep development work was on the east dome of the field in Section 2-5-9w and 11-5-9w, where the highest part of the structure appears to be in that field. All production from the Chickasha Field has been gas and very few attempts have been made to drill below the gas horizon.

A survey of the regional structure in the two counties indicates the origin of the movement of the Wichita uplift is younger than the Cement-Chickasha anticline. If this is found to be true unconformities are expected to be similar to these in the Oklahoma City Field, which are found near the base of the Canyon or Marmaton formation, and at Garber, and on the structures of Wichita and Wilbarger Counties, Texas. The depth, calculated from data of formations of the Oklahoma City Field, is as follows: At Cement 1,000 feet more of Permian, and



Office and laboratory roof of slag-covered asphalt saturated felt. Headley Emulsified Asphalt used to build up the membrane and bond the slag.

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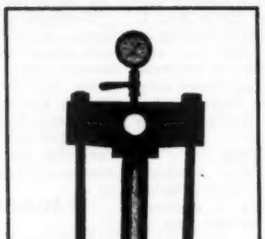

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2,000 feet less Pennsylvanian. With all formations running the same, the unconformity should be 1,000 feet shallower than at Oklahoma City, but the test drilled in Section 6-5-9w indicates a thickening of the Pennsylvanian between the Checkerboard and the Oswego. In addition to this element of uncertainty it remains to be seen how much the pre-Pennsylvanian sediments have been eroded.

The problem confronting the operators and geologists is to determine the thickness of the Pennsylvanian formation below the Oswego lime or the Marmaton formation, because the Oswego has not been identified in the area.

Greater Seminole Production

The production from the Greater Seminole area for the week ending April 13 averaged 183,770 bbls. of oil a day from 2,861 wells. The area shows a decline of approximately 41,563 bbls. from the previous week. The first 12 pools listed below comprises the Seminole area, which averaged 131,480 bbls. a day from 1,856 wells.

Pool—	Wells	Bbls.
Little River	369	22,133
East Little River	81	6,445
Carr City	84	12,599
Maud	131	2,425
Mission	90	9,876
Bowlegs	272	13,883
Earlsboro	282	19,698
S. Earlsboro	27	5,979
E. Earlsboro	155	18,761
Seminole	251	13,973
E. Seminole	34	1,806
Allen	280	11,314
Asher	25	724
Wanette	59	6,918
Konawa	110	9,094
Sasakwa	47	2,892
St. Louis	484	21,346
Total	2,861	183,770

Carter County

Carter Oil Co.'s No. 1 J. C. Taylor, SW cor. NW NW, Section 19-1s-2w, is drilling at 50 feet. The Texas Company's No. 6 Eaves, NE cor. SW SW, Section 24-1s-3w, has been completed for 300 bbls. in broken sand 2,372-85 feet and sand 2,385-2,481 feet.

Cleveland County

Continental Oil Co.'s No. 5 Sudik, SW cor. NW NE, Section 6-10-2w, Oklahoma City Field, topped Wilcox sand at 6,670 feet, drilled to 6,694 feet and made 75 bbls. in four hours on the pump.

Coal County

Mid-Western Oil Co. moved a machine in for No. 1 Gum Brothers, C SW NW, Section 30-3-10.

Creek County

Ecans, Lair and others' No. 1 Nantz, NE cor. NW SW, Section 30-19-9, is drilling at 650 feet. Murta, Sherry and Carter Oil Co. made location for No. 1-C Wilson, SE cor. NE NW, Section 32-17-12. Gled Oil Co.'s No. 2 Travis, C SE NE, Section 13-19-8, has been completed for 115 bbls. in sand 2,108-50 feet. J. H. Wright estate's No. 1-A McKellop, SE cor. NE SW, Section 23-17-10, is dry and abandoned at 3,294 feet. Murta and others' No. 4 Wilson, NW cor. SE NW, Section 32-17-12, made 240 bbls. in Wilcox sand 2,390-2,406 feet.

Garvin County

H. T. Skinner and others' No. 1 Elred, SW cor., Section 13-2-3, has drilled to 980 feet and is shut down.

Haskell County

Enterprise Gas Co.'s No. 1 Green, C SW NW, Section 9-9-18, is spudding.

Lincoln County

T. B. Slick estate has the rig up for No. 3 Fee, SE cor. NE SW, Section 7-14-4, West Chandler Field. Location has been made for No. 4 Fee, NE cor. SE SW, Section 7-14-4.

Muskogee County

H. E. Dowd and others moved the machine in for No. 1 Hembree, C NW NE, Section 23-10-19. Mazda Oil Co.'s No. 1 L. Ingram, NW cor. NE SE, Section 9-15-18, an old well drilled deeper, has been completed for 35 bbls. in sand 1,004-19 feet.

Oklahoma County

T. B. Slick estate's No. 2 Wepaco, Block 1, Lot 14, East Grand Avenue Addition, CSL NW SW SE, Section 34-12-3w, Oklahoma City Field, is rigging up rotary tools. Phillips Petroleum Co. has the cellar dug for No. 1 Reserve, Block 2, Walnut Grove Addition, NW cor. NE, Section 3-11-3w. T. B. Slick estate's No. 2 Terminal, CSL NE SE NW, Section 3-11-3w, is a cellar. Westgate Oil Co. made location for No. 1 Blevins, NE cor. SW SW NW, Section 10-11-3w. Eason Oil Co. made location for No. 1 Rodesney, NW cor. SE, Section 15-11-3w, in Block 1, Craig Subdivision of Fruitland Addition.

T. B. Slick estate and Atkinson's No. 2 Townsend, NE cor. SE NW, Section 1-11-3w, had sand 6,487-6,549 feet, plugged back to 5,194 feet and has been abandoned. Oils, Inc.'s No. 1 Hathaway, SW cor. SE SW NW, Section 2-11-3w, has been completed for 9,197 bbls. in four hours from Wilcox sand 6,230-85 feet, total depth 6,490 feet. Anderson & Prichard and Phillips Petroleum Co.'s No. 1 Wilhoit Community, NW cor. SE NW NE, Section 10-11-3w, had Wilcox sand 6,290-6,413 feet, total depth 6,416 feet and flowed 5,699 bbls. in four hours. Phillips Petroleum Co.'s No. 1 Kleinegger, NE cor. SE NE, Section 10-11-3w, made 13,443 bbls. from Wilcox sand 6,272-6,314 feet, total depth 6,316 feet. Indian Territory Illuminating Oil Co. and Cromwell Franklin Oil Co.'s No. 1 Billen, NE cor. SE NE, Section 26-11-3w, has been completed for 1,677 bbls. in eight hours from sand at 6,345 feet.

Okmulgee County

W. L. Barner and others' No. 1 S. Butler, NW cor. SE SE, Section 16-12-14, is a machine. Jordan and others' No. 2 M. Anderson, CWL E half NE, Section 28-12-14, is rigging up. The Texas Company's No. 1 Meyers, CWL SW NE, Section 35-16-11, has been completed for 35 bbls. in sand 1,788-1,802 feet. Jordan and others' No. 1 M. Anderson, SW cor. SE NE, Section 28-12-14, has been completed for 400,000 feet of gas in sand 560-68 feet.

Pittsburg County

Choctaw Gas Co.'s No. 1 Lovier, NE cor. SE NE, Section 8-7-18, is spudding. Utilities Production Co.'s No. 3 C. Carney, CNL NE NW, Section 9-7-18, is rigging up. No. 1 S. Cotcher, SW cor., Section 9-7-18, made 4,500,000 feet of gas from sand 1,739-2,040 feet. Peerless and others' No. 1 Ringland, NW cor. NE, Section 7-6-15, has been abandoned at 1,505 feet.

Seminole County

R. H. Pierce and others' No. 1 Halsey, NW cor. NE, Section 17-9-6, is rigging up. Amerada Petroleum Corp. has the cellar dug for No. 1 L. Tiger, NE cor. NW SE, Section 3-8-5, Carr City Pool. No. 2 L. Tiger, SE cor. SW NE, Section 3-8-5, is also a cellar. Empire Oil & Refining Co. is moving in the rig for No. 3 Brown, NW cor. NE SE, Section 3-8-5. Gypsy Oil Co.'s No. 1 Lizzy Coker, SW cor. NE, Section 2-8-5, Carr City Pool, made 927 bbls. from Wilcox sand 4,213-31 feet. Carter Oil Co.'s No. 5 Rogers, NW cor. SE, Section 2-8-5, has been completed for 583 bbls. in Wilcox sand 4,193-4,205 feet. Mid-Continent Petroleum Corp.'s No. 1 Tommy, SE cor. NE NE, Section 25-8-7, is dry and abandoned at 3,185 feet in Cromwell sand. Magnolia Petroleum Co.'s No. 2 Hyde-Swan, NW cor. SW SE, Section 29-6-6, Konawa Pool, has been abandoned at 2,910 feet.

Tulsa County

Galt-Brown Oil Co.'s No. 1-A McKay, SE cor. NW SW, Section 32-19-11, is a dry hole at 2,602 feet.

Wagoner County

E. C. Peebles and others' No. 1 T. Chissoe, NE cor., Section 34-17-15, is dry and abandoned at 1,050 feet.

H. D. CRAWFORD DIES

MUSKEGON, Mich., Apr. 18.—H. D. Crawford, of Mount Pleasant, Mich., employed by the Pure Oil Co. in the Mount Pleasant Field, died April 14, following an operation at the University Hospital, Ann Arbor, Mich.

INVESTIGATING GAS COMPANIES

Field examination of two important holding companies, one of which has large natural gas operations, were begun in the last 30 days by the Federal Trade Commission in its power and gas utilities investigation.

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Long Search for Oil in Smith County

Lewis' Discovery on West Side of East Texas County Preceded by Years of Exploratory Work. What the Record Shows

By Special Correspondent

TYLER, Tex., Apr. 18.—Bringing into production of Guy V. Lewis' No. 1 S. S. Cooke on March 30 ended a 15-year search for oil in Smith County, Texas, after ironical discoveries of major pools on three boundaries in the past two years. The Cooke well, one-half mile inside of the Smith County east line, definitely extends the Joiner Pool for a mile and three-fourths to the west. Lewis is the recipient of the $10,000 bonus made up by business men of Tyler, county seat, for the first commercial producer discovered in their county's limits.

The strange streak of irony that surrounded the county began in 1929 with the discovery of the Boggy Creek Field in Cherokee County, adjoining Smith to the south, which brought a lease play up to the Smith County line. Van Field was opened the same year just a few miles west of the northwestern portion of the county. September, 1930, saw the discovery of the Woodbine sand shoreline fields in western Rusk County, within 3 miles of the Smith County line. Three months later, the Bateman Pool was found, adjoining the northeastern portion of Smith County, which in turn was followed by the Lathrop wildcat coming in as a gusher near the northeastern corner of the county. The Cooke well definitely ended the "three-ring oil circus" that had played to capacity crowds around the county.

Present Development

At the present time there are eight active operations being carried on within Smith County. One is a shutdown, two are drilling, four are rigs up and one is a location.

Thayer and Rogers' No. 1 Willingham in the Jacob Herrin Survey in the southeast part of the county has been shut down at 2,000 feet for several months.

C. M. Joiner and others' No. 1 Cleo Clark in the Van Sickle Survey in southeastern Smith County is drilling ahead at 3,000 feet. It is located 4 miles southeast of Tyler, just off of the Tyler-Henderson paved highway.

The other drilling operation is Milburn, Beesley and T. B. Slick Estate's (Winona Oil & Gas Co.) No. 1 Morgan Freeman in the A. J. Legrone Survey, at which operations are being resumed after a shutdown of four months. Reaming is being carried down to the old total depth of 3,625 feet before the actual drilling is resumed. It is definitely out of the Pecan Gap chalk series. This test is located 4 miles southeast of Winona.

Smith County's first oil well, which came into production on March 30, culminating the attempts made during 28 years to locate oil in the county. Thirty-five failures were drilled. The first oil well is Guy V. Lewis' No. 1 S. S. Cooke.

Rigs are up at Howard Petroleum Co.'s No. 1 Holt Estate in the Barnes Clark Survey in the extreme central eastern portion; R. H. Davis' No. 1 M. Starnes in the Sam Epps Survey in northeastern portion, and C. B. Bunte's No. 1 A. S. Jarvis in the Juan Vargas Survey in the extreme southeastern part of the county.

A location has been staked by P. A. Diggs for his George Gibbons' No. 1 in the J. M. Garcia Survey in the north central part of the county just south of the Sabine River, which separates Smith from Wood County.

Contract for a 4,000-foot test 1 mile southwest of Lindale was let on March 27 by H. H. Hancock and M. J. McCarty of Wink, Tex. Operations are to commence within two weeks.

Since 1902, 36 wells drilled in all parts of the county except the extreme eastern portion proved unproductive of oil or gas and were abandoned. The following is the analysis of these total depths:

From 0 to 1,000 feet	8 wells
From 1,000 to 2,000 feet	8 wells
From 2,000 to 3,000 feet	9 wells
From 3,000 to 4,000 feet	7 wells
From 4,000 to 5,000 feet	3 wells
From 5,000 to 6,000 feet	1 well

Of these, 23 were drilled on the six salt domes lying in the salt basin situated in the central and western parts of the county.

Only three wells drilled in Smith County reached the Woodbine sand. They are: Gulf Production Co.'s No. 3 R. McCammand in the Vinson Moore Survey located on the Bullard salt dome; Amerada's No. 1 Christian in the Felix Flores Survey located in the north central part of the county, and Owen-Sloan's No. 1 J. M. Starnes in the John W. Allen Survey located in the extreme northeastern part of the county.

Leasing

More than 75 per cent of the county is under oil and gas lease, according to Orin Lowery, assistant in the county clerk's office at Tyler, who has noticed the development closely. Checkerboarding has been carried on since January, south of Friendship on the Oscar Hawkins and George Slaughter Surveys, in the extreme northeastern parts of the county, by the Humble, Shell and The Texas Companies. Since the strike by the Selby Oil & Gas Co. near Gladewater, leasing and royalty buying has increased in the vicinity of the well and on flanking acreage.

Blocks

Twenty-seven blocks are now in force throughout the county, 17 of which are held by major companies, namely: the Amerada, Gulf, Humble, Pure, Sun and Texas, with most of the blocking activity having taken place during 1930.

The following is the complete list of assembled blocks now in effect (index letter refers to the block outlined on the accompanying map):

(A) T. B. Slick Estate; (B) Pure Oil Co.; (C) Givens Manufacturing Co.; (D) Pure Oil Co. (east edge of Van block); (E) Gulf Production Co.; (F) J. A. Mallory and Hubert Lake; (G) Cotton-Belt Oil Co., 2,000 acres; (H) Gulf Production Co.; (I) Amerada Petroleum Corp., 4,000 acres; (J) R. H. Davis; (K) Milburn, Beesley and T. B. Slick Estate; (L) Humble Oil & Refining Co.; (M) Sun Oil Co.; (N) Gulf Production Co.-Pure Oil Co.; (O) Amerada Petroleum Corp.; (P) Humble Oil & Refining Co.; (Q) C. M. Joiner, J. D. Cameron, W. D. Tucker; (R) The Texas Company-Gulf Production Co.; (S) Sun Oil Co.; (T) Humble Oil & Refining Co.; (U) E. L. Chapman; (V) Southern Crude Oil Purchasing Co.; (W) Gulf Production Co., 3,200 acres; (X) Sun Oil Co.; (Y) Copeland, 3,000 acres; (Z) Gulf Production Co.; (AA) Sun Oil Co.

Geophysical Exploration

As early as 1926, the Houston Oil Co. did seismograph work in the northeastern

INDIVIDUAL WELL RECORDS

Index	Salt dome	Lessee	Farm	Survey	Drilling dates: Commenced	Completed	Total depth	Status	Shows	Finished drlg. in
1.		Sutton et al	J. M. Hamman No. 1	Jas. Reid			....	Dry		
2.		Vereigires et al	E. Sikes No. 1	J. S. W. Merchants			....	Dry		
3.		P. A. Diggs	Geo. Gibbons No. 1	J. M. Garcia			....	Loc.		
4.		East Texas Oil Corp.	G. E. Kadene No. 1	John McFadden			3,514	Dry	S. O. 703, 769 ft.	
5.		Rainbow Oil & Inv.	S. H. Taylor No. 1	Jas. Burch			1,800	Dry		
6.		Deep Rock Oil	John P. Bowdoin No. 1	Martin V. Lout	Jan., 1929	Apr., 1930	4,220	Dry		
7.	Steen		Scott Est. No. 1	M. De la Carmona		—, 1902	600	Dry		Salt
8.	Steen		Scott Est. No. 2	M. De la Carmona		—, 1902	400	Dry		Salt
9.	Steen	Lindale Oil	E. W. Winter No. 1	M. G. Estrada		June, 1920	2,630	Dry		
10.		Amerada Petr.	Christian No. 1	Felix Flores	Nov., 1928	Jan., 1929	5,400	Dry		Comanchean
11.			W. Y. Rice No. 1	John Draper			3,126	Dry		Austin
12.		Owen-Sloan Oil	J. M. Starnes No. 1	John W. Allen			4,235	Dry		Georgetown
12a.		H. H. Davis	M. Starnes No. 1	Sam Epps			....	Rig		
13.		Milburn, Slick Est. et al	Freeman No. 1	A. J. Legrone	July, 1930		3,625	Drlg.		
14.	Mount Sylvan	Humble Oil & Ref.	L. D. Reese No. 1	Jos. Shields	Jan., 1931	Feb., 1931	1,200	Dry		Salt
15.	Tyler	Apex Dome Co.	J. K. Phillips No. 1	E. Bodenhammer			2,611	Dry	S. O. & G. 2,291, 2,550, 2,563, 2,599 ft.	
16.	Tyler	Humble Oil & Ref.	Lassater No. 1	Bryant Herring	Apr., 1928	Apr., 1928	905	Dry		Rock salt
17.	Tyler	Humble Oil & Ref.	T. C. Williams No. 1	A. Don Keller	May, 1928	May, 1928	2,719	Dry		Salt
18.		Sinclair Oil & Gas	S. Brooks No. 1	B. S. Watts			3,310	Dry		Pecan Gap
19.		Howard Petr.	Lee Holf Est. No. 1	Barnes Clark			....	Loc		
20.		A. C. Dickey	W. M. Parker No. 1	Don T. Quevada			3,000	Dry		
21.		Elkton Oil	Marah et al No. 1	Marshall Univ.		Nov., 1921	2,475	Dry		Upper Taylor
22.		Joiner-Cameron	Cleo Clark No. 1	E. Van Sickle	Mar., 1930		1,925	Drlg.		
23.		Sun Oil	O. McGehee No. 1	Don T. Quevada	Sept., 1930	Dec., 1930	3,844	Dry		Pecan Gap
24.	Whitehouse	Humble Oil & Ref.	H. M. Van Havenburg No. 1		Mar., 1928	Mar., 1928	550	Dry		Anhydrite
25.	Whitehouse	Humble Oil & Ref.	J. M. Pruitt No. 1	S. Henderson	Mar., 1928	Mar., 1928	2,019	Dry		Rock salt
26.	Whitehouse	Humble Oil & Ref.	Birdsong No. 1		Feb., 1928	Apr., 1928	2,723	Dry		
27.	Whitehouse	Clara Oil & Coal	O. Funderburgh No. 1	Wm. Ratcliff			1,432	Dry	Trace 328 ft.; S. O. 1,214-77 ft.	
28.	Whitehouse	Clara Oil & Coal	O. Funderburgh No. 2	Wm. Ratcliff			1,812	Dry		
29.		Thayer & Rogers	Willingham No. 1	Jacob Herrin			2,000	S.D.		
30.		Lewis, Foster et al	S. S. Cooke No. 1	Jas. Jordan		Mar., 1930	3,676	Oiler		Woodbine
31.	Brooks	Brooks-Saline Oil	Meyer No. 1	Don T. Quevada	Aug., 1920		528	Dry		
32.	Brooks	Brooks-Saline Oil	Meyer No. 2	Don T. Quevada	Sept., 1920		2,769	Dry	S. G. 2,024-7, 2,136 ft.; S. O. 2,367 ft.	Rock salt
33.	Brooks	Brooks-Saline Oil	B. B. Kimball No. 1	J. M. Acosta		May, 1921	1,864	Dry		
34.	Brooks	Brooks-Saline Oil	Woldert No. 1	Pedro E. Bean	Aug., 1919		420	Dry	S. O. 117-25, 345 ft.	Rock salt
35.	Brooks	Brooks-Saline Oil	Woldert No. 2	Pedro E. Bean			850	Dry		Rock salt
36.	Brooks	Brooks-Saline Oil	Beauchamp No. 1	Pedro E. Bean	Sept., 1919		2,193	Dry	S. O. 490-500, 3,027 ft.; S. G. 3,033-7 ft.	
37.	Brooks	Brooks-Saline Oil	Beauchamp No. 2	Pedro E. Bean	Mar., 1920		2,161	Dry		Rock salt
38.	Bullard	Gulf Production	R. McCammond No. 1	Vinson Moore			2,950	Dry		Rock salt
39.	Bullard	Gulf Production	R. McCammond No. 2	Vinson Moore	Mar., 1928	May, 1928	3,316	Dry		
40.	Bullard	Gulf Production	R. McCammond No. 3	Vinson Moore		Sept., 1928	4,219	Dry		Georgetown
41.	Bullard	Gulf Production	Morgan No. 1	Vinson Moore			533	Dry		
42.		Rucker Oil & Gas	D. N. Shaw No. 1	Wm. Miller			1,210	Dry		
43.		C. B. Bunte	Dr. A. S. Jarvis No. 1	Juan Vargas			....	Rig		

portion of the county near Starrville. The Gulf maintained a torsion balance party in the same area the same year. The magnetometer and seismograph have been used very extensively throughout the county since the discovery of Boggy Creek and Van.

Regional Geology

Eastern Smith County lies on the western flank of the Sabine Uplift and the central and western portion of the county occupy the northern portion of the East Texas salt basin which comprises parts of Wood, Smith, Van Zandt, Cherokee, Anderson and Freestone Counties. Six domes have been defined: Tyler Dome, lying northeast of Tyler in the central part of the county; the Whitehouse Dome in the central southern portion; the Bullard Dome in the extreme central southern part; the Brooks Dome in the extreme southwestern portion; the Mount Sylvan in the middle western portion, and the Steen Dome in the north central part of the county. The regional dip on the Pecan Gap chalk and the Woodbine sand from the county boundaries, except the southern, is towards the town of Tyler, which is situated in the northern portion of the East Texas geosyncline.

Surface Geology

Formations of the Claiborne group of lower Eocene age outcrop throughout the county with the Cook Mountain formations occupying the central part of the county surrounded on the surface with formations of the Mount Selman (Carrizo, Reklaw, Queen City and Weches). The Tyler green sand is found about 120 feet below the Weches formation.

SMITH COUNTY, TEXAS, RECORD OF PAST AND PRESENT DEVELOPMENT
Summary

Locations	1
Rigs up	4
Drilling	2
Shut down	1
Oil wells	1
Gas wells	0
Dry holes	36
Total for the county	45

HENRY WATERS ADVANCED

R. S. Ellison, president of Stanolind Crude Oil Purchasing Co., announces that the directors at a meeting on Saturday, April 18, appointed Henry Waters executive assistant of the company.

Mr. Waters has been chief scout of the Stanolind Crude Oil Purchasing Co. for years, and will continue this work and title along with his new duties.

TO DISCUSS ANTITRUST LAW

Possibilities of business stabilization will be appraised by business men at the nineteenth annual meeting of the Chamber of Commerce of the United States at Atlantic City, N. J., April 28 to May 1. The following subjects will be considered: The effect of government competition upon business; government policy in relation to limitations on production and marketing; effect of antitrust laws; agriculture and land policy; the business cycle and industrial stabilization.

GENERAL SUMMING UP OF DRILLING OPERATIONS IN CORNING DISTRICT

By Special Correspondent

CORNING, N. Y., Apr. 18.—Crescent Producing Co.'s No. 1 Wayne, in the Wayne district in Schuyler County, New York, was brought in this week with an initial flow of 4,000,000 feet of gas at 1,800 feet. The well is only 200 feet from J. T. Cunningham's No. 1 Houck, which was completed the previous week as a gas producer. It is considered good engineering, as a rule, to space gas wells 1,320 feet apart, as a gasser can drain 40 acres under average sand conditions, so that the Cunningham and Crescent wells might be said to be on the same "location."

J. T. Cunningham Oil & Gas Corp. has an 8,000,000-foot gasser in No. 1 Eveland in the village of Wayne. It is the twenty-fourth gasser in the Wayne-Dundee Field. Sand was uncovered at 1,728 feet and the sand drilled in 20 feet. It is reported that Cunningham will move the rig from this location to drill an offset to the Crescent Producing Co.'s No. 1 Gordon, the offset being only 200 feet from the Crescent's well. The Wayne development is a town lot operation and the operators have evidently not got together on the unification of the village lots.

The Belmont Quadrange Drilling Co., which opened the Dundee gas field has a failure in No. 1 Price, which hopelessly went to salt water.

On the Pennsylvania side of the field no new gas wells were completed in the week in review. The Lycoming Natural Gas Co.'s No. 1 Ackley in Clymer Township, Tioga County, was abandoned. North Penn Gas Co.'s No. 1 Kemp, Lawrence Township, Tioga County, was abandoned at 5,090 feet. Leonard Drilling Co.'s No. 1 Harrison, Lawrence Township, was abandoned and pipe pulled.

Although not strictly up to date, general figures of the gas field, both to the north and south of Corning, are as follows:

In New York state:

Wayne Field, five producers, three dry and two drilling, eight locations.

Dundee Field, 20 producers, 4 dry holes, 8 drilling.

Watkins Glen Field, seven abandoned, six producers, one dry hole.

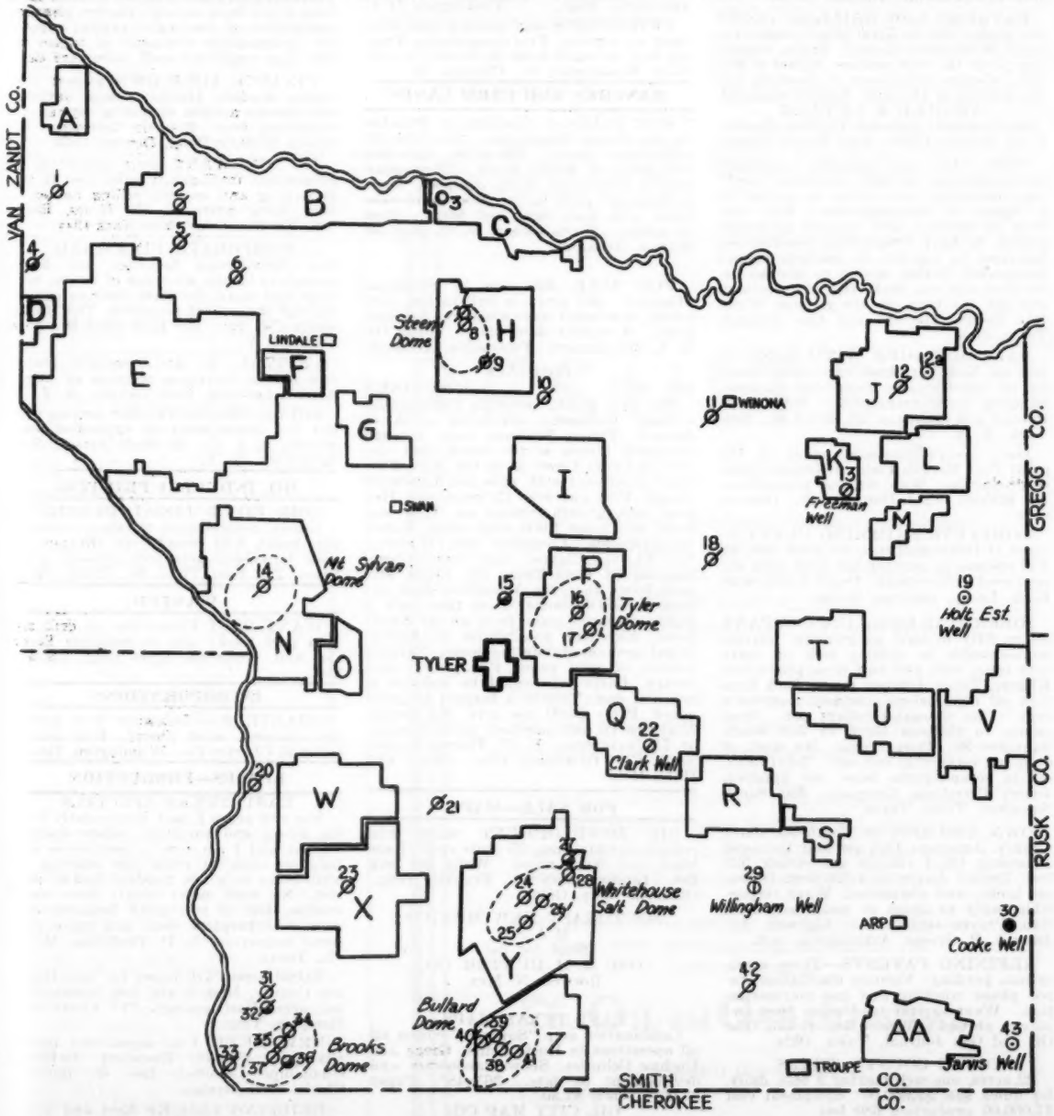
Ithaca Field, five abandoned, one drilling.

Woodhull-Corning-Addison-Elmira district (running east and west on map), 2 drilling, 3 dry holes, 23 abandoned and 2 producers.

In Pennsylvania:

Tioga Field, 29 drilling, 4 producers, 5 dry holes.

There are probably 30 locations over all which have not yet been recorded.



Map showing lease blocks and the development work of several years past in Smith County, East Texas, where recently oil was discovered on the west side of the county. The ownership in the blocks and other details are given in the accompanying article.

Gross Production Tax On Indian Oil Lands Effective This Spring

The production of oil from the Five Civilized Tribes' lands in Oklahoma, heretofore protected by the Government from both its own and state levies, will become subject to the State's 3 per cent gross production tax shortly. This is by virtue of a congressional act of May 10, 1928.

The Indian lands will become subject to taxation April 26, and the properties of oil producers July 1. The producers having already been levied on for the period from April 26 to June 30.

This Federal measure would have netted Oklahoma $1,000,000 had it been in effect in 1930. In that year, $4,600,000 was paid into the Indian Agency at Muskogee as royalty, according to the superintendent's report to the Interior Department. Based on this figure, it is estimated that the total oil production from the Five Civilized Tribes' leases approximated $37,000,000. And under the 1928 congressional act, the producers' seven-eighths, like the Indian royalty of one-eighth, becomes taxable, according to Edward Herrick, head of the agency's law department.

Three per cent of this total, or $1,104,000, is what the State would have received had the production for the 1930 fiscal year been subject to a gross production tax. Of this amount, $138,000 would have been paid by the Muskogee agency to the state treasury out of restricted funds it holds.

In the past the development of the tax-exempt Indian leases has been a prize for oil men. Before the gross production tax was in effect, even a tax on much of the investments made by the developers and producers on the leases was forbidden by the Government.

Congressman W. W. Hastings of Tahlequah, one of the sponsors of the Federal measure, says that the time had come for the Indian to begin to bear his share of the Government's expense. "I insisted that the rich Indian ought to be taxed, but that the little fellow back in the hills should continue to be protected; this is accomplished," Mr. Hastings says. All restricted lands that are not productive of oil and gas are still nontaxable.

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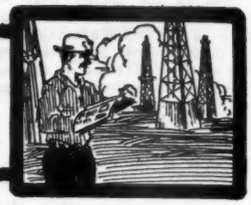

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Four 10,000-gals. tank cars coiled. 50 ton trucks. Victor Car line, 111 West Jackson Blvd., Chicago, Ill.

CASING, ALL SIZES, to trade for 2-inch line pipe. J. P. Williams, Tankersley, Texas.

Two practically new Buckeye Ditchers, with lots of spares, only been used a few months. Model 35. Two Buckeye Backfillers and one Cleveland Tamping Roller. Terms is desired. Guaranteed 98% new—for half price. M. Wenzel, 4029 S. Benton, Kansas City, Mo.

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100 OIL and gas engines for sale. Superior, Reid, Franklin, Foos, Black Bear and Primm 15 to 80 H.P. in fine order; new models, low prices. Edward A. Schambs, Jr., Box 868, Wichita Falls, Tex. Phone 6356.

FOR SALE—Slightly used Ingersoll-Rand steam two stage, 250-pound air compressor. Piston displacement. 312 cubic feet per minute at 200 r.p.m. Complete with intercooler and receiver. Write Box E-456, The Oil and Gas Journal, Tulsa, Okla.

USED EQUIPMENT

For gasoline, production, pipe line and drilling branch of oil industry. Enormous stocks of equipment to choose from at minimum cost. Let us save you money by serving as a medium through which to buy and sell your used equipment.

OIL FIELD EQUIPMENT EXCHANGE
Mid-Continent Oil Companies
Official Clearing House

308 Rits Bldg. Tulsa Phone 4-8168

TWO 5½ KEYSTONES fully equipped for 1,000 foot drilling for sale cheap. The Veeder Supply and Development Company, Cherryvale, Kansas.

FOR SALE AT BARGAIN—Ten Railroad Tank Cars Class III, 8,000 gallons, heater coils, safety valves, etc., now in service. Delivered free in South. Write Clark, Box 1612, Shreveport, La.

EQUIPMENT WANTED

2" LINE PIPE
WANTED—Eight miles—Must be bargain. J. P. Williams, Tankersley, Tex.

BUSINESS OPPORTUNITIES

DEEDED MINERAL interest spread covers 6 tracts one under 5,000 barrel well in Rusk County new field. Write for map. ¼ mineral rights 142 acres Bee County 1,200 feet from 450 barrel well $250.00 basis. 7,905.5 acres new 10 year paid up lease ¼ royalty same term Edwards County, Texas, in active line of play $1.25 acre. Stieren & Koenig, Alamo National Bldg., San Antonio, Texas.

OIL located before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses, 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

DRILLING Blocks, East Texas, 3,500 to 10,000 acres. Maps, geology. W. G. Singletary, 5921 Preston Road, Dallas, Texas.

TOPPING Plant Operators—You can economically increase your gasoline yield. Communicate with Practical Petrolist, Box 77. Belleville, Illinois.

EXTREME LOW DRILLING COSTS and gusher (up to 5,000 bbls.) production make Williamson County, Texas, serpentine plugs the best venture. $4,000 to $8,000. Covers entire cost of blocking and the drilling of the well. Inquiry solicited.
NICOLLE & NICOLLE
Geogologically Selected Drilling Blocks
P. O. Drawer 1720 Fort Worth, Texas.

WHY—Are you spending thousands for exploration to locate structure; drilling, producing, and trying to market in a region of overproduction? Why not, drill the world's most unusual structure, proven to have tremendous possibilities. Location in relation to markets cannot be equaled. Driller wishes to interest individual who can make trip of inspection and get the facts on the ground. Write Box E-468, The Oil and Gas Journal, Tulsa, Okla.

SALESMANAGER WITH $5,000, to join old New York brokerage house, build up oil royalty sales force and clientele, handling large transactions. References. Parmer and Company, 25 Broad St., New York, N. Y.

Have several thousand acres in the great Fort Morgan Field (Colorado) close to production. Want drilling proposition. Ed Rikhoff, 1284 Downing St., Denver, Colo.

COMPLETE SKIMMING PLANT located at Denison, Texas, for rent, sale, or will operate on partnership basis with experienced refineryman. Don't write, wire E. S. Lacey, Denison, Texas.

JOBERT OIL DRILLING COMPANY offers fifty divided assignments interest nonassessable in drilling well on forty acre lease, mile and half from production Kilgore, Texas. Interest money back from first oil runs before company receives a cent. One thousand dollars per. Send money to Citizens Bank or 300 South Saunders St., Tyler, Texas. No stock or units but ownership interest. Total interest in seven-eighths lease one hundred. Jobert Petroleum Company, 300 South Saunders, Tyler, Texas.

OWN 2,000 acres fee Southeast Clark County, Arkansas. Can get four thousand adjoining. Good volume gas struck 521 feet. Drilled deeper to 1,320 feet. Operator broke, well abandoned. Want responsible party to finish or make new location. Proven structure on highway. Address A. P. Greene, Arkadelphia, Ark.

REFINING PATENTS—Three applications pending: Vacuum distillation, vapor phase cracking and gas polymerization. Want capital to develop here and patent abroad. Write Box E-457, The Oil and Gas Journal, Tulsa, Okla.

YOUNG COUNTY, TEXAS
22 acres, one well making 3 bbls. daily, for quick sale $1,200.00; equipment cost $1,000.00 production 580 feet.
R. E. MOORE
GRAHAM, TEXAS.

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CURTIS BROKERAGE COMPANY
dealers in
Used Oil Field Equipment
for
Drilling, Production, Gasoline and Pipe Line Departments.
List your surplus with us.
And advise us of your needs.
S. O. Curtis, P. O. Box 1214.
Seminole, Oklahoma.

YOUNG COUNTY, TEXAS
Settled shallow production 20 acre, two producing wells making 11 barrels production daily; 520 feet, two proven offsets, room for six locations, full 7/8th lease for quick sale $4,400.00.
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GRAHAM, TEXAS.

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FOR SALE—640 acre in Southeast Missouri. 400 acres in cultivation, very fertile, wonderful improvements. An ideal home. A regular show place. Write Dr. R. L. Montgomery. Tuscumbia, Alabama.

BARGAIN
OIL MEN RANCHERS
We own 11,812 acres in Pushmataha County, Oklahoma, 25 miles north of Antlers. Frisco Railroad runs through southeast corner of the ranch, and station of Crum Creek is on the land. This tract is covered with pine and hardwood timber. Pine cut over 12 years ago. Has good new growth coming on. Well watered, will graze 1,000 head cattle. Ranch improvements. Accessible from Highway No. 10, via Clayton and Crum Creek. Opening of East Texas Oil Fields and probability that the Woodbine sand extends into Oklahoma, gives this tract a highly potential value from an oil standpoint. Excellent possibilities as recreational ground or hunting lodge. Natural habitat of wild game. Plenty deer and turkey. Large lake could be built at a nominal cost. This is a bargain at price asked. Price $3.00 per acre. No trades. Might carry half purchase price 5 years at 7½% interest. E. C. Thorne Investment Co., Oklahoma City, Okla., 611 Hales Bldg.

FOR SALE—MAPS

OIL DEVELOPMENT maps, any county in Oklahoma, 75 cents each; lease block and detail maps. Write for map list. Lindsay Map Co., Franklin Bldg., Oklahoma City, Okla.

SOUTHEAST NEW MEXICO
MAPS
Send for list.
THE M. H. HUNTER. CO.
Roswell, N. Mex.

EAST TEXAS MAPS
Combination map "Superior" covers all oil operations in Rusk, Smith, Gregg and Upshur Counties. Shows landowner and development to date. 36"x48". Paper $5.00. Cloth $7.50.
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English Company is in a position to find capital for sound producing Oil Royalty propositions where we are satisfied good returns can be obtained. Issues made where further capital is required for paying concerns with good past results. References required. Send fullest particulars in first instance to:

"Capital"

The Oil and Gas Journal,
Tulsa, Oklahoma.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 2443 N. W. 12th, Oklahoma City.

CAPITAL—Call or send facts about high grade oil projects to James E. Miller Co., 203½ East Third St., Tulsa, Okla.

JOHN MORRIS, 3608 WARREN ST., PHILADELPHIA, PA., invites full facts first letter from capable parties planning negotiation of reasonable capital support for undertakings distinctly of higher order. Use registered mail, safeguard data.

FINANCE YOUR OWN project with shares bonded. Quickest, most satisfactory known method of raising capital. Information free. Bankers Interstate Security, Electric Bldg., Denver, Colo.

IF YOU WANT your securities or proposition intelligently submitted to underwriting and security selling houses in New York, write W. W. Hines, Room 803. 150 Broadway, New York City.

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Our distributing facilities are broad enough to handle all types of issues, both large and small, for those desiring capital through the sale of securities. The Brookworth Co., Inc., 110 East 42nd St., New York, N. Y.

CAPITAL: An exp. dependable broker will aid in financing projects of merit. Amster Leonard, East Orange, N. J.

SOUND PROPOSITIONS seeking capital for development or expansion send details. S. I. C., 82 Wall Street, New York City, N. Y.

OIL INDUSTRY PRINTING

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

WANTED

WANT BEST Proposition to drill my Van pool lease; also to complete Ector Co. well. Anderson, Linz Bldg., Dallas, Tex.

INCORPORATIONS

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free forms. Colonial Charter Co., Wilmington, Del.

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EAST TEXAS SPECIALS
For two years I have been quietly buying leases and royalties, before drilling started, and I am now in position to sell holdings close to wells just starting to drill. Some in a few hundred feet of derrick. No mail order stuff. Save your stamps. But if you mean business and want real bargains come and make personal inspection. L. D. Bertillion, Mineola, Texas.

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NEW MEXICO oil leases and royalties Lea, Chaves, Roosevelt, DeBaca, Guadalupe Counties. Roy G. Barton, Clovis, New Mexico.

DRILLING BLOCKS East and West Texas. Also leases, royalty and production. Anderson, Linz Bldg., Dallas, Tex.

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Mineral deeds under major company leases or accompanied by leases, Stevens-Morton County area, Ness-Trego-Gove area in Kansas and Beaver-Texas Counties, Oklahoma area.
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WEST KENTUCKY Oil and Gas Leases. All picked leases on proven structure. Big gas wells flowing. Oil wells 10 cents per acre with 10 cents rentals per acre. W. S. Lowery, Paducah Star Route, Marion, Ky.

OIL leases and royalties ahead of the drill. Buy while they are cheap. Washita and Custer Counties. Get my prices.
J. J. Sallaska & Son. Corn, Okla.

EXTRAORDINARY OPPORTUNITY to obtain a five or ten-year paid up mineral lease on La Salle uplift, Dimmit County, Tex. 11,000-acre solid block. Address owner, Box 656, Houston, Tex.

A REAL OPPORTUNITY
Four thousand acre gas leases for sale. Proven territory forty cents year around market. Shallow drilling, 4 sands, deepest twenty five hundred feet. Will stand closest investigation. Charles E. Karns, Drilling Contractor, 202 Claremont Ave., Ashland, Ohio

FOR SALE: 40, 80, or 240 acre oil and gas lease, Real County, Texas. About 5 miles west of Gant, Kilgore, and Evans Well now drilling. Cohn, Grand Junction, Tenn.

FOR LEASE
4,480-acre block in Irion County on line between Howard-Glasscock Pool and Mertzon shallow pool, close to 15,000-acre block recently leased by Benedum-Trees. Two 5,000-acre blocks in west Menard County on good structure. Two 2,500-acre blocks, Concho County, near two drilling wells and on good structure. Address H. B. Opp. Menard, Texas.

YOUNG COUNTY OIL LEASE
20 or 40 acres new 10 year 88 Form Commercial Leases, first class title for quick sale $4.00 per acre. This lease would make an excellent speculative investment.
R. E. MOORE
GRAHAM, TEXAS.

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Phone 2-6261
A. K. RILEY

UNDER THE BIGGEST WELLS
In East Texas
ROYALTIES AT REASONABLE PRICES
Quick Deliveries
John L. Dickson, Box 1037, Tulsa, Okla

ROYALTY FOR SALE
UNDEVELOPED Royalty, Western Kansas, under 10 yr. lease to reliable oil company, pays $80 rental annually. Price $275 per quarter section. Address Owner, Box 1227, Muskogee, Okla.

$12.50 BUYS DEED, part oil, two oil royalties City Pool. Ed Milam, Dept. J., Oklahoma City, Oklahoma.

LAND, all royalty, on Geological and core drill structure, oil fields, Oklahoma County, adjoining location for well. Health forces sale, one-fifth value. George W. Seckman, Edmond, Okla.

FOR SALE—¼ royalty under 4,000-acre block, Concho County, near two wells now drilling. H. B. Opp, Menard, Texas.

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FOR SALE: Perpetual deeded oil royalty, located in the great potential oil fields of Lea County, New Mexico. Also 5-year oil and gas leases. Prices reasonable. Terms easy. Possibilities great. Monarch Inv. Co., Roswell, N. Mex.

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Avoid costly mistakes and disappointment.
Unless you are trained by education and experience to judge values and possibilities, you may need the guidance of those who are so educated and trained.
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NATURAL GAS & PETROLEUM
RESEARCH CORPORATION
122 East 42nd Street,
NEW YORK CITY.

EAST TEXAS ROYALTIES—Gregg, Rusk, Cass, Marion, Harrison Counties. Big list. Harry Haynes, Grantville, Kans.

ROYALTIES—PRODUCTION

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FOR ROYALTIES

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If you can invest $100 cash or part payments write us about our 60,000-acre royalty spread. Greatest plan ever devised.
EAST TEXAS PRODUCTION CO.
allas Bank and Trust Bldg., Dallas, Tex.

OPPORTUNITY — $25 buys 1/512 landowners royalty in tract near production; Rusk County, Texas, field. Lewis De Geurin, Box 112, Overton, Tex.

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THE OIL AND GAS JOURNAL
TULSA OKLAHOMA

ROYALTIES—PRODUCTION

DRILLING STARTING in Kilgore Townsite; 1/128th. landowners' royalty in two tracts; in edge of Kilgore; $100. Act quick if you want in this royalty division. Guy J. Stumpff, Con. Eng., Box 404, Kilgore, Texas.

EAST TEXAS ROYALTIES on geology head of production with wildcats drilling close. Sensible prices and individual direct deeds. See maps and geology and pick your own play. Wells drilling make promptness important. R. R. Fisk, 1214-C, Wichita Falls, Tex.

MID-CONTINENT OIL ROYALTIES at reasonable prices and with assurance of safety. Past record "Chicago dealer since 1920" indicates quick return of principal and handsome profit. Write me. J. A. Wolf, 208 South LaSalle St., Chicago, Ill.

ROYALTY RECORD

Form shows rental record, mortgage record, expenditures, sales record, tax record, well record, monthly production record. All on one sheet; size 8½"x11"; punched to fit standard ring binder. Convenient for desk or brief case. Sheets—$5 per 100; fine leather binder, $5.25; leather tabbed index, $1.20. Order this complete record today. Know what you own and its condition.

E. L. STECK CO.
Austin, Tex.

BEDROCK ROYALTY PRICES ahead of drilling on major company blocks. $6 per square mile. Perpetual deeds and title warranty. Clearly stated and understandable interests. See maps and bulletins. R. R. Fisk, Box 1214-B, Wichita Falls, Texas.

MID-CONTINENT OIL ROYALTIES
Royalty Sales Company
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105 North Clark St.,
Chicago, Ill.

TEXAS ROYALTIES

If you require a connection that will enable you to deal in Texas Royalties with the same confidence you would have if you were on the ground yourself, write

J. F. MARION OIL COMPANY
Magnolia Bldg.,
Dallas, Tex.

TURN TO PAGE 112 FOR ADDITIONAL CLASSIFIED ADS.

Little Change in East Coast Market

Sentiment More on Constructive Side and Notwithstanding Unfavorable Conditions Betterment is Expected

By A. E. Mockler
New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Apr. 20.—East Coast refined products markets showed little change last week from conditions previously prevailing, and the trade appeared to be marking time pending further developments. Market sentiment was more on the constructive side, however, and notwithstanding current unfavorable conditions, from the statistical standpoint, leading interests were inclined to believe that conditions would soon take a change for the better, and that gasoline, the real gauge in the market barometer, would witness a stronger position in refinery sales.

Constructive sentiment, however, is based largely on the belief that the problem of domestic overproduction of crude will shortly be thoroughly in hand and that the import curtailment movement launched for the current quarter by leading importing companies will be completely effective. Barring the satisfactory adjustment of the East Texas situation, however, the stability of the eastern gasoline market will be considerably jeopardized by shipments of gasoline refined in the Gulf Coast area from low cost East Texas crudes. This contingency, serious as its outcome might prove to be, appears to have been rather well discounted in eastern market circles, however.

Eastern operators are anticipating an early recovery in the lubricating oil market with the advent of the spring motoring season. Cylinder oils have been in most disturbed position during the past few months, and prices at the refineries are now at extremely low levels. With eastern refiners holding down lub oil output as much as possible, it is believed that the statistically unfavorable aspect of the eastern market will soon be corrected, and that an upturn in spot values will naturally follow.

Refinery Gasoline

The refinery gasoline market is in extremely unsettled position locally, but with weather conditions unusually fine for this season of the year and consumption steadily on the increase, refiners are hopeful that the market will work into stronger ground in the near future.

The "official" posted price for U. S. Motor gasoline in tank car lots ranges from 6⅜ to 6½ cents per gallon, f.o.b. refinery terminals, but it is no secret that motor fuel can be bought as low as 6 cents per gallon in some quarters. Jobbers are thoroughly aware of the present state of the market and are not hesitant in pressing for concessions when coming into the market with orders of any sizable amount.

A cargo of gasoline was reported sold out of the Gulf during the week for shipment to New York. The deal involved 8,000 bbls. of U. S. Motor, and the price figured out a little over 5 cents per gallon, delivered at New York.

California U. S. Motor was reported offering during the week by one seller at 3⅝ cents per gallon, f.o.b., which price figures out approximately 4.9 cents per gallon c.i.f. New York.

Refiners are closely watching the spot market on these so-called "outside" gasolines, as it is realized that any heavy influx of gasoline from California and the Gulf will entirely offset the beneficial results accruing to the East Coast refined products market from the curtailment in imports of South American gasoline and other refined products.

Competition in the market for barge shipments of gasoline is fully as keen as is the case with the tank car market. This business, which comes in from large marketers with bulk storage adjacent to waterways, runs anywhere from 3,000 to 15,000 bbls. at a time, and refiners generally take this business at three-eighths to one-half cent per gallon under the inside figure currently quoted on tank car shipments.

Tank Wagon Gasoline

Notwithstanding the steadily broadening consuming demand for motor fuel, overcompetition, coupled with the weak refinery market, is making for continued price cutting in retail sales, and the price structure throughout East Coast territory is still far from stabilized.

A general readjustment of both tank wagon and service station quotations is expected to be made shortly by leading marketers in an effort to effect some degree of stabilization before the summer motoring season gets under way.

The competitive situation in New York and New England territory has been heightened by the recent introduction of "Esso," the premium grade fuel of Standard Oil Co. of New Jersey, at all of the filling stations of Colonial-Beacon Oil Co. in this territory. This step marks the first open and direct competition of the New Jersey company with Standard Oil Co. of New York, its former affiliate, and removes the last barrier to the former territorial lines among the old Standard Oil group.

While several of the major companies have eliminated a number of large independent marketing companies from the picture by purchases during recent years, new independent marketers have sprung up in place of those absorbed by the large integrated companies, and a number of new independent chain groups are now active in the territory, continuing the apparently endless duplication of filling station facilities which has become so generally recognized as one of the most uneconomic phases of the oil industry's operations.

Kerosene

The posted price of 6 cents per gallon for 41-43 water white in tank car lots at refineries is being freely shaded, and a good deal of the current spot business is going through at 5¾ cents per gallon. Demand has been picking up slowly, but is still under that looked for at this time of the year, and some interests are inclined to keep stocks moving at the expense of prices.

Tank wagon kerosene volume is reported as "satisfactory," but the expected spurt in consumption is overdue, and aggregate gallonage is under marketers' expectations in many instances. No changes in tank wagon posted prices are reported this week.

Lubs

The market for cylinder oils is taking on more activity, but the situation is still somewhat unsettled from a price standpoint, although traders believe that the market is now "scraping bottom." Spot 600 Pennsylvania flash was available during the week at a range of 20 to 21 cents per gallon, the inside price representing a 1-cent decline. Bright stocks, however, were working into firmer ground, with the light quoted at 26½ cents per gallon and the dark at 24½ cents, representing an increase of one-half cent per gallon in both instances.

Blenders and compounders are coming into the market for stocks in a larger way, but in view of the firmer price views shown by refiners on inquiries for stocks for delivery over the next two months, buyers in most instances are confining their operations to the spot market, buying as they go along, rather than risk the placing of contracts at prices which might possibly appear unfavorable later on in the event that the general market structure should witness another break.

Leading marketing groups are launching extensive sales campaigns on motor oils in an effort to corral as much of the spring demand as possible, and the low prices which they are able to quote this season are expected to improve demand considerably. Most of the sales campaigns in East Coast territory are stressing 100 per cent Pennsylvania lubs.

Industrial demand for red and pale oils continues spotty, but refiners report some improvement in gallonage on the part of the textile industry, and tank car movement of spindle and other oils is somewhat better than has been the case during recent weeks. Prices on these oils remain quotably unchanged.

Paraffin Wax

Domestic volume has slumped off, and with export inquiry also along routine lines, the market tone continues easy. Spot 125-127 a.m.p. is quoted an eighth lower at 3⅛ cents per pound, with 133-135 a.m.p. and 135-137 a.m.p. recording similar declines to 4¼ cents and 4⅝ cents per pound, respectively.

Refiners' stocks of wax are still top-heavy in some instances, and selling pressure is by no means infrequent, all of which tends to defer the return of stability to the general market position.

Fuel Oil

The market for bunker "C" has gone through the week unchanged at $1.05 per barrel in bulk, f.o.b. marine terminals, and a good business is reported.

A number of additional large transatlantic liners have been diverted by leading foreign lines for cruises to "nowhere" from New York, and this necessarily means more bunkering for New York refiners.

Stocks of fuel and gas oils at East Coast refineries showed a slight increase during the week ending April 11, totaling 7,706,000 bbls. on that date.

Diesel Oil

Gallonage in Diesel oil has been well maintained during the week, and the market is quotably unchanged at $1.75 per barrel, in bulk, at marine terminals, with the usual charge of 6.5 cents per barrel for barging alongside within the harbor limits.

Stocks of Diesel oil held by East Coast refiners are not large, and unless heavier shipments from California and the Gulf should reach Atlantic Coast markets, the outlook for the maintenance of present price levels is described as favorable.

Gas Oil

With daylight saving time now in effect for the summer months, demand for gas oil from the large gas manufacturing companies in East Coast territory has fallen off somewhat, further weakening the spot market position.

The posted price for 28 plus recycled gas oil is nominally unchanged at 5¼ cents per gallon, but current sales are being made from 4¼ cents upward, according to quantity and circumstances.

Demand for low-grade gas oil for domestic heating purposes is just about over for the season.

Export Market

No cargo fixtures of gasoline or kerosene were reported from either the Gulf or California during the week, as far as the open market was concerned, and prices continued nominal. Large integrated companies with foreign marketing facilities are still moving products in substantial volume for foreign consumption, but Russia and Rumania have cut substantially into the open market, and the situation has been further affected by the reported decline in consumption in many foreign countries.

Export operators here were closely interested in the political upset in Spain during the week, and there was considerable speculation as to just how the change of government in that country will affect the operations of the Spanish Petroleum Monopoly. Thus far, there has been no official announcement from officials of the new Spanish government, but it is not believed here that the monopoly will be scrapped and a free and open market for refined petroleum established in Spain.

Petroleum Exports

Export movement of refined petroleum products from the local port held up fairly well during the week ended April 11, with substantial gains reported on some products. Inquiry in the spot market had shown some improvement, and export operators were showing a little more optimism in the market outlook for the nearby position.

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Apr. 11	Apr. 4	Mar. 28
Gasoline	675,000	150,000	110,000
Naphtha	750,000	215,000	105,000
Kerosene	105,000	40,000	85,000
Fuel oil	190,000	20,000	.....
Lubricating oil	1,450,000	3,207,000	940,000
Petroleum, ref.	965,000	950,000	340,000
	Pounds		
Petrolatum	200,000	40,000	13,000
Paraffin wax	1,485,000	2,590,000	1,375,000
Refined	30,000	.....	.....
Scale	585,000	650,000	430,000
Lubricating grease	950,000	1,010,000	710,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended April 11 totaled 1,300,000 bbls., a daily average of 185,714 bbls., compared with 2,289,000 bbls., a daily average of 327,000 bbls. for the week ended April 4 and a daily average of 247,607 bbls. for the four weeks ended April 11. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	245,000
Boston	131,000
New York	541,000
Philadelphia	243,000
Others	140,000
Total	1,300,000
Daily average	185,714
At Gulf Coast ports—	
All ports	None
At all United States ports—	
Total	1,300,000
Daily average	185,714
Daily average four weeks	247,607

Distribution of total imports is as follows:

Crude	712,000
Gasoline	341,000
Fuel oil	247,000

It is expected that imports of both crude petroleum and refined products will show a substantial decline within the next few weeks in line with the announced policy of principal importing companies in reducing their shipments into the United States.

California Oil Receipts

Receipts of California crude and refined petroleum at Atlantic and Gulf Coast ports for the week ended April 11 totaled 192,000 bbls., a daily average of 27,429 bbls., compared with 487,000 bbls., a daily average of 69,571 bbls. for the

previous week and a daily average of 50,929 bbls. for the four weeks ended April 11. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Philadelphia	192,000
Total	192,000
Daily average	27,429
At Gulf Coast ports—	
All ports	None
At Atlantic and Gulf Coast ports—	
Total	192,000
Daily average	27,429
Daily average four weeks	50,929

Distribution of total California oil receipts is as follows:

Gasoline	192,000

Shipments of California refined products eastward during the week (with identity of owner of tanker moving the oil where such owner of record is an oil company) follow:

To New York—73,500 bbls. of gasoline on the Reaper (The Texas Company); 73,100 bbls. of gasoline on the New Jersey (The Texas Company).

To Providence—72,600 bbls. of gasoline on the Texas (The Texas Company).

To Fall River, Mass.—38,000 bbls. of gasoline and 41,000 bbls. of kerosene on the K. R. Kingsbury (Standard Oil Co. of California).

Charter Market

Continued quiet is reported in the tanker market. Funch, Edye & Co. in their weekly report say:

Tankers. The market is nearly stagnant and the absence of orders for clean vessels prohibits business. The only clean fixture reported this week is for account of Russian shippers from Black Sea to Vladivostok, who secured tonnage on favorable terms. There are one or two inquiries for clean space Gulf to U.K./Continent, May/June. Some black oil vessels were closed as reported and although there are a few inquiries for this class of carrier, especially for Transatlantic trading, charterers are in no hurry to fix. The American Coastwise and Intercoastal trades were featureless and there is no demand.

Tankers

Fixtures during the week were as follows:

Nor M/S Chr Th. Boe, 8,000 tons cargo, clean, Black Sea to Vladivostok and/or Amur Bary, 16/9, May.

Br Stmr British Beacon, 4,000 tons part cargo, fuel oil, Trinidad to U.K. 10/6, April/May.

Br Stmr Adellen, option Trimountain, 10,000 tons cargo, crude, Aruba to Teneriffe, one or two voyages commencing May, 6/-.

Dan. M/S Anna Maersk, 7,600 tons cargo, fuel oil, Constanza to Ceuta, 6/-, end April.

Nor M/S Deodata, 3,500 tons cargo, fuel oil, Batoum to Piraeus, 6/3, April.

FRAGMENTAL ROCKS

The Stanford University Press, Stanford University, California, has just published an instructive book presenting some of the investigative methods developed by mineralogists, geologists, ceramists, hydrologists, petroleum engineers, metallurgists and chemical engineers for the examination of mineral fragments. The book is compiled by Frederick G. Tickell, professor of petroleum engineering, Stanford University, and is entitled "The Examination of Fragmental Rocks." The book may be secured from the Stanford University Press, Stanford University, Calif., or Humphrey Milford, Oxford University Press, London, England, ($5).

WELDING CONFERENCE

FORT WORTH, Tex., Apr. 20.—The fifth annual welding conference of the Southwestern Welding Association will be held at the North Texas Agricultural College at Arlington, Tex., April 22-23. M. C. Stone, director of the engineering department of the college and secretary-treasurer of the association, will be host to the conference delegates. Twenty-five of the largest welding companies in the Southwest will have exhibits.

Introduction of New Grade Gasoline

Trade Interested in the Special Priced Motor Fuel and the Question of Marketing It. Specifications of Samples

By Robert C. Conine

CHICAGO, Apr. 20.—Changes in the retail gasoline situation continued to be the principal subject discussed in the refined marketing trade of this territory the past week. The Standard Oil Co. of Indiana is rapidly installing its third grade of retail gasoline, "Stanolind Blue," at all the principal consuming centers of the middle western states and several of their leading competitors are pursuing the same policy.

So far as open market quotations at refineries are concerned the trend in prices continues downward. While several refiners in the Mid-Continent and other refining centers continue to hold to the advances announced a week ago in gasoline, other sellers are quoting direct to the trade as low as 3⅛ cents for the U. S. Motor grade with 3¼ to 3½ cents considered the going market.

Due to the uncertainty as to how they will meet the new competition in the retail markets, jobbers have been slow in making spot purchases and have also been slow in ordering out some of their contract material. Some of the jobbers are asking for more concessions, claiming that they will have to have greater margins to meet the low prices which are being established by the major distributors. It is apparent that jobbers who have built up a cut-rate business over the past year are especially worried and many are endeavoring to reach some agreement with their refinery sources which will protect them. It is probable that these efforts will receive little consideration from refiners who in most instances are already showing a loss in the operation of their plants.

Straightrun Gasoline

The first move of many of the marketers was to ascertain if the third grade motor fuel proposition was to be a vehicle for aiding the refiner to move the large quantities of straightrun U. S. Motor specifications fuel which has accumulated in the wake of the spreading popularity of antiknock gasolines.

Two distillation tests in different consuming centers indicate that the "Stanolind Blue" is a good grade of motor fuel, but conflicting results were obtained in the tests for probable antiknock value. A sample taken at St. Louis gave the following test: Gravity, 57.1; initial, 92°; 10 per cent, 153°; 20 per cent, 195°; 30 per cent, 230°; 40 per cent, 258°; 50 per cent, 282°; 60 per cent, 305°; 70 per cent, 331°; 80 per cent, 357°; 90 per cent, 387°, and endpoint, 436°, with 97 per cent plus recovery. The gasoline was doctor sweet, and in the acid-heat test only a slight trace of cracked gasoline was detected and the Ethyl rqeuirement was put at 3.7 cc.

The second sample was taken in Chicago and showed a slightly higher gravity, 58.9°, while the initial was the same, 92°. The endpoint in this case was 437° and the recovery 97.5 per cent. This sample was higher in knock rating than the St. Louis test. Both samples were 26 color blue. Intermediate points for the Chicago sample were: 5 per cent, 128°; 10 per cent, 149°; 20 per cent, 190°; 30 per cent, 222°; 40 per cent, 250°; 50 per cent, 272°; 60 per cent, 298°; 70 per cent, 326°; 80 per cent, 356°; 90 per cent, 394°; 95 per cent, 422°.

This strategy against the inroads of the cut-rate retailers was actually in operation one day after Standard of Indiana announced its decision to introduce the third grade fuel. Pure Oil Co. anticipated the action by offering a lower priced motor fuel at 125 of its stations at the pumps recently vacated by the removal of the company's "Purol" from the market. This company is now selling the Ethyl brand, the "Purol Pep" (which is a distinctive blue) as its regular brand, and a white gasoline (dispensed from red pumps) to compete with the cut-rate dealers.

Means Added Investment

Although there is an atmosphere of doubt as to the advisability of following Standard Oil Co. of Indiana in the handling of a motor fuel which has low price as its principal recommendation, the major competitors are showing strong indications of a readiness to take the step, although only a few will escape the heavy investments involved in the installation of the additional equipment required.

One of the larger companies will have to spend nearly $1,000,000 to handle the third grade gasoline, while Sinclair Refining Co. and Pure Oil Co. already have the required facilities available. The Sinclair company may drop its "Aircraft" brand and substitute the cheaper fuel, and Pure Oil Co. has already withdrawn its "Purol" and adopted a third grade. One of the major companies, however, is understood to be planning to reduce the price of its regular grade to meet the cut-rate competition. When the Standard company introduced the low price fuel at St. Louis last Wednesday at 10.9 cents, 1 cent above the cut-rate price, it advanced the price of its Red Crown regular and Red Crown Ethyl 2 cents, while the other majors continued to hold these grades down "pending further developments."

A point which is worth careful consideration has been brought up by a student of marketing conditions. This is the opinion that the third grade of gasoline may serve to reduce the quantity of straightrun gasoline in storage by the larger refiners. Disposition of the straightrun fuel, which, except in rare instances, has a poor antiknock rating, would permit the refiner to reach a more balanced operation of his plants. The cracked gasoline, which in at least one refinery has an octane number superior to that of Ethyl standard and makes possible the production of a cracked and straightrun gasoline blend of at least 71 octane number, is not produced in quantities sufficient to meet the large straightrun output.

It is pointed out that the diversion of the cracked gasoline to the manufacture of premium grades may serve to reduce the gallonage of the Ethyl brands through the production of regular motor fuels of high antiknock rating.

It is also predicted that the introduction of the third grade of gasoline by the majors will drive the jobbers who have been selling under the market to the handling of a 50-50 blend of natural gasoline and high endpoint naphthas. With naphtha at 3 cents and natural gasoline at 2 cents the cut-rate dealers will be provided with a motor fuel which will permit them to drop their prices well under the third grade markets.

The cheap price of gasoline, on one side, has greatly reduced the kerosene business as far as the tractor and stationary engine outlet is concerned, while on the other side the success of engine manufacturers in producing equipment which will operate on various grades of distillates has had its effect on the kerosene markets.

Fuel Oil and Gas Oil

Any change in the fuel oil and gas oil situation is on the downward side. The close of the oil burner season has naturally been reflected in a smaller demand for all grades of fuel oil used as furnace fuel. Except where there are regular outlets refiners are not now manufacturing the high gravity fuel oil as a result there is very little spot business. The zero to 10 grades of 26-30 are available at as low as 60 cents a barrel, and the 28-30 at a low of 67.5 cents. The gravities under 18 of low cold test are bringing a low of 40 cents with high cold test material quoted as low as 30 cents. Group 3.

The U.G.I. and industrial grades of gas oil have been sold in this territory as low as 2⅛ cents, basis Group 3. The demand is not heavy even at these low prices. The low flash and low cold test gas oils which are used as furnace oils are still in demand and most sellers are quoting a low of 2 cents with a price range up to 2¼ cents.

The 36-38 and 38-40 gravity furnace oils are available at practically the same price as the best grade of gas oil. However, quite a number of refiners are now refining a 38-40 distillate for tractor use. In some cases the distillate is prime white in color and closely approximates kerosene specifications except for color. This product is generally quoted in this territory at 2¼ to 2½ cents.

Kerosene

Some sellers have reported a better demand for kerosene in the past few days, however the supplies are adequate and there has been no effort to advance prices which start at a low of 2½ cents for a 41-43 water white grade. Prices range up to 2¾ cents for the higher gravities.

Lubricants

There has been some increase in the movement of bright stocks and neutral oils in this territory to compounders. This reflects the seasonal increase in the demand for finished motor oils. As in the case of practically all other refined products manufacturers of lubricating stocks have plenty of material on hand and they are not attempting to advance prices with the start of the metoring season. In fact, bright stock prices are being shaded almost daily. The competition between Pennsylvania bright stocks and Mid-Continent bright stocks continue and both are at a practical parity as far as this territory is concerned.

NO REGULATION IN ALABAMA

MONTGOMERY, Ala., Apr. 18.—The bill by Representative Mize of Tuscaloosa to regulate oil and gas prospecting in Alabama was given an adverse report by the house committee on civil laws.

The bill, as drawn by Mr. Mize, gave the state geologist absolute power to control drilling and carried a penalty for operators who neglected to take precautions against waste of oil or gas.

Senator Darden, author of a bill in the senate offering a bounty to wildcatters who bring in oil or gas wells, opposed the Mize bill on the grounds that the restrictions placed around drilling would choke off prospectors.

J. H. SUTTLES DIES

J. H. Suttles, president of the Houston Ready Cut House Co. of Houston passed away April 11, after a short illness.

WALTER ADDICKS DIES

NEW YORK, Apr. 18.—Walter Roberts Addicks, senior vice president of the Consolidated Gas Co., died of pneumonia April 14 at his home at Greenwich, Conn., at the age of 70.

CLASSIFIED WANTS

(Continued from Page 110)

ROYALTIES—PRODUCTION

ROYALTIES: Carefully selected, choice royalties in the Oklahoma City and East Texas pools, which if bought today on the basis of conditions as they are, will certainly make money. We have these and some few good buys in the older more settled areas, as well as royalties of a more speculative character. As a broker whose business it is to investigate, select and offer the best buys on the market and who must keep his customers making money in order to keep them and to stay in business, will appreciate the opportunity of figuring with you and keeping these selections before you. J. B. McAnally, 1118 Hunt Bldg., Tulsa, Okla.

ROYALTY UNDER DRILLING WELL offsetting production in Ritz Canton area, Kansas. Assignment in lease and well to be drilled Gregg County, Texas, close up territory to big wells. Royalties in Stafford County, Kansas, Ellsworth Arch excellent geology. Stevens County, Kansas, gas royalty. Others in Gregg, Rusk, Smith, Hopkins, Franklin, Cherokee, Upshur Counties, East Texas. James R. Haynes, Grantville, Kansas.

ECTOR Co. ROYALTY joining Gulf block, few miles of new Rector, Ward Co. well between it and Penn pool and near Wurtz well. Part cash. Anderson, Linz Bldg., Dallas, Texas.

MID-CONTINENT OIL ROYALTIES at reasonable prices and with assurance of safety. Past record "Chicago dealer since 1920" indicates quick return of principal and handsome profit. Write me. J. A. Wolf, 208 South LaSalle St., Chicago, Ill.

POSITIONS WANTED

EDUCATIONAL—Years of field experience. Best fitted for SAFETY or other personal contact work. Employed now. Answer Box E-449, The Oil and Gas Journal, Tulsa, Okla.

PETROLEUM CHEMIST, M. A. & B. S. in Chemical Engineering, with 11 years' experience in refining as chief chemist and as assistant superintendent and advisor capacity to sales department, wishes to secure responsible position with reliable company. Excellent references. Write Box E-408, The Oil and Gas Journal, Tulsa, Okla.

LUBRICATING ENGINEER
Specializing in the refining of oil, 18 years research and supervising experience. Qualified to handle all grades of oil and size of plants. Can furnish best of references from leading refineries in California and Oklahoma. An interview will convince you that I am fitted for the work. Write Box E-466, The Oil and Gas Journal, Tulsa, Okla.

APPRAISING AND ACCOUNTING
Want work in the petroleum industry. Can furnish best of references upon application. I will furnish the name and address of past employers who in turn will write you direct of my qualification. Write Box E-467, The Oil and Gas Journal, Tulsa, Okla.

OIL REFINERY CONSTRUCTION SUPERINTENDENT, 18 years experience on construction of oil refineries, coke plants, power houses and casinghead plants. Familiar with all types of cracking plants. Best of references. Will go anywhere in world. Write Box E-465, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE ENGINEER: Five years refinery experience in designing, steel, concrete, pressure vessels, fractionating equipment and distillation. Desire position in refinery engineering office. Married with family to support and want permanent position. Write Box E-464, The Oil and Gas Journal, Tulsa, Okla.

GRADUATE MECHANICAL ENGINEER thoroughly capable as junior refinery executive through 2½ years varied experience in refinery engineering and operation with major company. Write Box E-463, The Oil and Gas Journal, Tulsa, Okla.

POSITION AS SUPERINTENDENT or petroleum technologist of an oil refinery. Now employed. Thoroughly understand all refinery operations and manufacturing of oils, greases, etc. Write Box E-462, The Oil and Gas Journal, Tulsa, Okla.

POSITIONS WANTED

MIDDLE-AGED business man, just relieved from position on account of merger, will consider proposition from a reliable concern wanting office executive or business manager. Any legitimate line of business will be considered. Address Box E-444, The Oil and Gas Journal, Tulsa, Okla.

RIGHT OF WAY and CLAIM MAN experienced, desires position. University graduate. Furnish references. H. J. Conrad, 2547 West 12th Street, Oklahoma City, Okla. Phone 5-9532.

CHEMIST

CHEMIST FAMILIAR WITH manufacture and testing of asphalts and road oils; location Oklahoma. State experience, references, salary. Apply to Box 1868, Fort Worth Texas.

COMPTROLLER, AUDITOR, OFFICE MANAGER, 34 years of age, with wide experience including five years public accounting, budgeting, system work, etc., desires permanent connection with reliable oil company. Excellent references. At present employed. Write Box E-458, The Oil and Gas Journal, Tulsa, Okla.

OIL REFINERY Construction Superintendent, 15 years' experience on construction oil refineries, coke plants, power houses and steel mills. Both general contractor and corporation experience. Age 35. Best references. Write Box E-460, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED—By mechanical engineer, 12 years' experience selling gas and Diesel engines and air and gas compressors. Hold Department of Commerce pilot license. Will go anywhere. Further information upon request. Write Box E-459, The Oil and Gas Journal, Tulsa, Okla.

CHEMICAL engineer. Five years' experience as analytical and petroleum chemist. Eager for foreign service for responsible party. Address Box E-461, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

DESIRE CONNECTION with producer who would be in a position to furnish 1,500 bbls. of high-gravity, Mid-Continent crude per day, also to take financial interest in Canadian refinery. Answer Box E-424, The Oil and Gas Journal, Tulsa, Okla.

Your ad telling of your qualification and the kind of work you desire placed under the Position Wanted Column will produce better and quicker results than waiting for the other fellow to advertise for you.

A special rate of 20 cents a line for the first insertion and 15 cents a line for each additional insertion, applies on Position Wanted ads.

RESEARCH LABORATORY MAN WANTED
Who is experienced in true boiling point and flash vaporization determinations and treating work.

STRUTHERS-WELLS CO.
Warren, Pa.

WANTED: Experienced man to handle oil and gas leases and take charge of Lease Exchange in new field. Must be able to furnish the best of references. State experience and reference first letter. Box 182, Williamsport, Penna.

WANTED: Salesmen and Sales Organizations to sell acreage proposition in Tioga Field. Fast selling proposition, must be reliable and furnish reference first letter. Address Tioga Realty & Development Company, Williamsport, Pa.

WRONG IDEA OF PRORATION PURPOSE BLAMED FOR MOST OPPOSITION TO IT

NEW YORK, Apr. 20.—Those who oppose proration most violently declare that it has failed of its purpose and cite as an evidence the fact that prices for crude oil have not been maintained at former levels, says the Standard Oil Co. (N. J.) in "The Lamp." Editorials have been written and interviews released charging that the purpose of proration is simply to maintain prices for crude oil and that since these prices have gone off proration is a failure, the article continues, saying:

"This idea is completely at variance with a correct understanding of the objects of proration. It has repeatedly been urged that proration tends to reduce costs and to promote equity as between neighboring producers of crude oil, but never recommended as an agency to maintain or increase crude oil prices. On the contrary maintenance or control of price is not properly a function of proration. Proration should not be allowed to interfere with the free play of supply and demand in the control of price.

"Last October W. S. Farish, president of Humble Oil & Refining Co., in announcing a reduction in the posted price of crude oil in the State of Texas, said: 'In no sense, however, does proration freeze prices or otherwise interfere with the free play of competitive forces.' This statement expresses the view that has at all times seemed to us to be valid.

"Proration, administered by the regulatory commissions of oil producing states, such as Texas, Oklahoma and California, should secure to each producer in an oil field a ratable share of the market outlet for that particular pool, for each pool a ratable share of the market outlet for that particular state, and for each state a ratable share in the entire market outlet of the nation. Incidentally to this accomplishment it will tend to reduce operating costs with consequent benefits to producer and public alike. It will tend to eliminate disorderly production methods, thereby preventing physical waste. It will tend to conserve a valuable natural resource. But proration cannot be made use of for the purpose of maintaining or increasing prices above the natural level which would prevail in its absence."

CHAIRMAN MURRAY GETS RESPONSE FROM BORAH

Cicero I. Murray, chairman of the Oil States Advisory Committee, wired the following reply to Senator Borah:

"Your statement to the press regarding the plans now under way for curtailment of oil production evidences lack of information on your part as to the real purpose of these efforts. The Oil States Advisory Committee is attempting to preserve the public interest by correcting present chaotic conditions. If conditions continue as now they will result in the abandonment of several hundred thousand small wells and in the loss to the public of billions of barrels of oil unrecoverable except through these wells. Furthermore, present conditions, if continued, will result in bankruptcy for all of the independent producers, refiners and marketers of oil in the United States, leaving only those few major concerns which are able to survive the storm, thereby creating an intolerable condition of monopoly.

"Whereas the public may now think it is gaining by low prices for petroleum products it is actually in grave danger within the near future of intolerably high prices due to monopoly as the outgrowth of present conditions. Our committee in its Texarkana report called attention to these conditions, and urged recognition of the fact that present production must be curtailed in order to preserve competition; furthermore that the public has a vital interest in conservation of these resources.

"This committee has never failed to consider the public interest and we believe that you yourself when you become fully informed will agree that the conservation programs now under way are necessary to the public interest. We have the same vital interest as you in protecting the public with fair retail prices of refined products and would welcome your co-operation to that end, and all of above purposes."

Senator Borah wired Chairman Murray the following response:

"The effect of my statement, in brief, was that if the Government and the states were going to take part in controlling production they would also have to take part in controlling price in order to protect the public. Do I understand from your telegram you object to this suggestion? My sympathy is naturally with the independents but over and above the independents and the big interests is the public and while I do not challenge your statement that you expect to protect the public I do not think your program will do so. The exorbitant and outrageous profits which have been realized in the oil industry have been made out of the public and it is time the public had a hearing.

OIL MAN'S CALENDAR

APRIL

23-24—Cleveland, Ohio, semi-annual meeting, National Petroleum Association, Hotel Cleveland.
27-28—Dallas, Tex., A.P.I. Central Group on Automotive Transportation, Adolphus Hotel.

MAY

4-9—Charlotte, N. C., Good Roads Convention.
11-12—Dallas, Tex., Annual Convention, National Oil Scouts' Association.
11-14—Memphis, Tenn., Natural Gas Department, American Gas Association.
14-15—New Orleans, La., American Oil Chemists Society.
19-21—Tulsa, Okla., Natural Gasoline Association of America, Mayo Hotel.
27-29—New York, National Foreign Trade Council.

JUNE

3-4—A.P.I. Division of Production, Baker Hotel, Dallas, Tex.
8-11—Toronto, Canada, National Association of Purchasing Agents, Royal York Hotel.
10-12—Swampscott, Mass., American Institute of Chemical Engineers.
15-18—Madison, Wis., fourth annual oil and gas power meeting, American Society of Mechanical Engineers.
15-19—White Sulphur Springs, W. Va., Summer Meeting, Society of Automotive Engineers.
22-26—Chicago, Annual Meeting, American Society for Testing Materials.

OCTOBER

2-3—Houston, Tex., Petroleum Division, American Institute of Mining and Metallurgical Engineers.

NOVEMBER

10-12—Chicago, Twelfth Annual Meeting, American Petroleum Institute, Stevens Hotel.

DECEMBER

28-31—Tulsa, Geological Society of America, Mayo Hotel.

Brief Items for Petroleum Refiners

NEBRASKA APPROVES IDEA OF COMPETITIVE GASOLINE

LINCOLN, Neb., Apr. 20.—Competition in a specific commodity cannot be met by unlawful price cutting on a related article under the Nebraska antidiscrimination laws, the attorney general of Nebraska, C. A. Sorensen, has ruled in a recent opinion. In answer to a direct question Mr. Sorensen said that, in his opinion, the courts in a prosecution for price cutting on gasoline would not approve a defense that a competitor reduced the price on oil.

In the absence of a rule that the price can only be reduced to meet the price of a competitor on the same article or commodity, Mr. Sorensen said, it would be almost impossible to secure a conviction.

"Every person who sells any commodity or service is, in a very real sense, competing against every other person who sells any commodity or service to get hold of the purchaser's dollar, but this is not the kind of competition which justifies a seller in reducing the price of his commodity in one locality below the price he maintains in another locality in the State," he holds.

Quality of Gasolines

The attorney general also ruled that different grades of gasoline could be legally sold at different prices and approved the alleged practice of concerns selling "competition gasoline," which is actually of different quality than other gasoline they are selling and the price of which is reduced to the price of the cut price competitor without reducing the price of their regular gas. This latter practice is lawful, he said, "if there is no misrepresentation to the public and if the seller maintains a uniform price throughout the State for the grade known as 'competitive gasoline.'"

Unable to find a definition of "competing territory," the attorney general said that when two bona fide competitors occupy the same "trade territory" each has the right to meet the other's prices regardless of whether they are in the same or different towns, counties or states.

In conclusion it was declared that the service given at a filling station cannot be considered a part of the price in meeting competition. It is permissible for a person operating two or more stations to give different service at a different station in the same city. A charge for the additional service could be made, however.

VACUUM-SOCONY MERGER

WASHINGTON, D. C., Apr. 20.—The Department of Justice has just received the order in the decree of the St. Louis federal court, which decided that the merger of Vacuum Oil Co. and Standard Oil Co. of New York was not in violation of the original consent decree entered in Supreme Court of United States, when the Standard Oil companies were segregated. Further action by the Government is understood to have been held up awaiting the final order from the St. Louis court and it is probable that an appeal will be taken direct to the Supreme Court in the near future.

ANOTHER EAST TEXAS REFINERY

LONGVIEW, Tex., Apr. 20.—Announcement has been made that the South Kilgore Refining Co., composed of Clarence McFall, Guy J. Stumpff, R. K. Haley and J. M. McDonald would start construction of the first refinery to be built in the Kilgore area. Longview has one refinery, owned by the East Texas Refining Co., and the Joiner Pool has two refineries, with two more being constructed at Overton and one at Arp and others proposed for these places.

DOHERTY CO. WITHDRAWS OFFER TO RICHFIELD OIL

NEW YORK, Apr. 21.—Henry L. Doherty and the Cities Service group have withdrawn their offer to exchange Cities Service stock for Richfield Oil Co. of California preferred shares. The Doherty group had originally sought up to 100,000 shares of Richfield preferred, following its earlier offer to acquire up to 500,000 shares of Richfield common in exchange for Cities Service common.

Withdrawal of the Doherty bid for Richfield preferred has given new strength to reports that Cities Service may not proceed with its plans or complete acquisition of Richfield. The recent audit of Richfield properties on behalf of the Cities Service group, it is said, brought to life hitherto undisclosed liabilities.

CHEMISTS TO MEET IN BARNSDALL THIS WEEK

The next meeting of the petroleum group of the Oklahoma section of the American Chemical Society will be held in Barnsdall on Friday, April 24, to carry out the following program:

2 p.m., inspection trip, Barnsdall refinery and Great Lakes pipe line pump station.

4 p.m., papers and discussion on "Corrosion."

5 p.m., "Atomic Hydrogen Welding" sound film by Doctor Langmuir.

6 p.m., dinner and entertainment; lecture on "explosives" by Prof. W. Otto Noyes.

The meeting is open to all who are interested, and nonmembers are welcomed.

PAUL RYAN GIVEN CHARGE SHELL SALES PROMOTION

The appointment of Paul Ryan as advertising and sales promotion manager of the Shell Petroleum Corp. has been announced by L. van Eeghen, vice president in charge of sales of that organization.

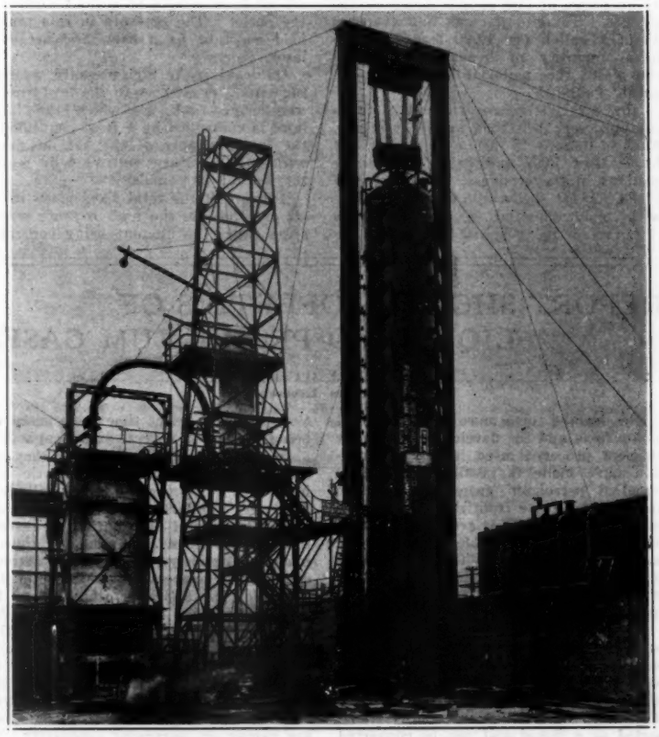
Mr. Ryan has been with the Shell corporation since 1928, having served as manager of the technical products department. He is 33 years old, a native of Philadelphia, Pa., and is a graduate of the University of Pennsylvania and the Massachusetts Institute of Technology. He took his business training at the Harvard Business School.

FRENCH CRUDE BUYERS IN AMERICAN MARKETS

NEW YORK, Apr. 21.—With plans for development of a refining industry in France completed as a result of the recent passage of the petroleum bill by the French parliament, French buyers have come into the American market for crude petroleum and considerable export business is looked for. According to reports in local market circles, one contract for 3,000,000 bbls. of Rusk County crude has already been closed, but information regarding the price paid is not available.

Cables from Paris state that 11 French importers have already been licensed to import crude oil, and it is expected that with the French government definitely committed to a program designed to build up the home refining industry, numerous refinery construction projects formulated during the past two years will now go forward.

NEW PENNZOIL CRACKING UNIT



Twenty-five hundred-barrel Dubbs cracking unit under construction at the Oil City, Pa., plant of the Pennzoil Co. The unit has been specially designed to produce endpoint gasoline of relatively high antiknock rating direct from Pennsylvania distillates or residues as well as a marketable low cold test fuel oil.

GROZNY COMPLETES FIVE-YEAR PLAN IN HALF TIME

The Grozneft (Grozny Oil Trust) has exceeded its five-year program in 2½ years. Production costs per ton of oil were 1.50 rubles lower than the cost scheduled for the last year of the plan. The five-year program for oil refining was exceeded by 10.5 per cent in 2 years, and that for prospecting and drilling operations, after 2¼ years.

In connection with the fulfillment of the five-year plan, April 1 was declared a holiday by the workers of the Chechen autonomous territory in the Caucasus. On that date a technical museum was opened named after Stalin and a palace of culture named after Lenin. The best "shock" workers will be granted awards totaling 150,000 rubles, besides places in health resorts, and trips abroad.

The Azneft (Azerbaidzhan Oil Trust) was expected to attain the five-year schedule by April 1. Its output during the present year is set at 15,827,000 metric tons, or 1,300,000 tons above the total set in the plan for 1932-33. The average daily output for March and April is set at 38,596 tons, or 5 per cent above that originally scheduled.

The Azneft program for oil refining, due to delay in the opening for operation of some installations, has been decreased somewhat, from 12,505,000 tons to 11,970,000 tons.

GULF OIL BUILDS TANKAGE

CLEVELAND, Ohio, Apr. 20.—Gulf Refining Co. has filed plans with the city building department for expansion of facilities at Jefferson Avenue distributing plant, to cost more than $180,000. Twenty-three steel tanks, ranging in capacity from 146,000 to 3,360,000 gallons, will be built on the property. Company also plans construction of new warehouse and office building later, bringing total expenditures here this year to more than $1,000,000.

ALL GASOLINE TAXABLE

SPARTANBURG, S. C., Apr. 20.—Gasoline kept, stored or used in South Carolina, not subject to other gasoline taxes, comes under the provisions of the 6-cent gasoline tax imposed by the State, according to a ruling of the state Supreme Court.

Textile bleacheries and finishing plants, which purchase and consume gasoline in large quantities, will be affected by this ruling, which is final.

MAINTAIN SHALE PLANT

A committee appointed last June to investigate the shale oil industry has recommended that the Swedish government purchase the plant at Kinnekulle for 400,000 crowns (the Swedish crown equals $0.268) and that 88,000 crowns be granted yearly to maintain production.

During 1930 the Kinnekulle plant produced 4,746 bbls. of Diesel oil at a cost of 6.30 crowns per barrel.

GAIN IN MOTOR OUTPUT

New gains in automobile production for March were indicated in the regular monthly estimate of the National Automobile Chamber of Commerce of motor production which placed the output for March at 286,883 cars and trucks. This is an increase of 25 per cent over the February output and places the industry ahead of its record for the last nine months. Production for the first quarter of 1931 was announced at 695,050 units, 34 per cent under the 1930 quarter.

Manufacture of Natural Gasoline

Responsibilities of Present Day Gasoline Plant Superintendent

By H. S. Hefner, Operator
Texas Pacific Coal & Oil Co.*

In considering the problems of a plant operator, I naturally go back to those first few weeks when I was breaking in, as it seemed then that the job was nothing but a series of troubles.

I have worked for hours trying to get a level down where I could see it, only to wake up and find myself home in bed.

The first impression of a new operator when he is taking over the plant is that everything is out of order at the same time and that things are scattered so that one man can't look after all of it. He has trouble regulating valves because he does not think of the slack that might be in them, and will open or close them too much.

A new man has trouble with the regulators and he does not know whether it was open or closed, and does not know what to do to make it work.

A new operator runs a pump at a certain rate because he is told to do so, and not because he understands the effect it has on production.

When he has trouble, to get help is the first thing of which he thinks because he does not know where to begin to look for the trouble.

There are many things that make for successful operation. The most important thing is for each man to understand and like his work, and not to think only of his relief coming and pay day. He should think only of his work for eight hours and not let his mind wander.

An operator should know the proper temperatures and pressures to hold in different kinds of weather that makes the best production and the right gasoline.

When something gets out of order, the operator should know the plant well enough that he has a good idea where to look for the trouble. If he will check over everything a time or two, he will find what is out of order. He should know where all lines run and how to switch pumps in case one gets out of working order. He should make all his rounds often enough so that if something gets out of order, he can repair it before it gets from under his control.

Nearly everything is tied together so that when you lose out in one place, it will cause a wiggle in nearly every other chart around the plant.

If an operator intends to put on an extra pump, he should add fire to the boilers beforehand so as to keep the steam the same and not cause any change in the temperatures.

The regulators save many stops. They also save time. In one case we had a water drain on a new part of the plant that took so much time, that it interfered with our work and caused a lot of worry. This was soon taken care of with a trap, and except for a glance on our rounds to see the level, our worries were over about losing gasoline or getting water into the accumulator.

We have self regulators on the boiler feed pump and on the boiler water levels. They have never been out of order, but we don't trust them and blow the gauge glasses everytime we make a trip to the boiler house.

Self regulators do not mean that the operator never has to look after them. He should watch them to see that they are working correctly. This is much easier than hand control. The regulators on the still could hang closed, and fill the still. This would cause the gasoline

(Continued on Page 125)

*Read at plant operators' meeting at Thurber, Tex.

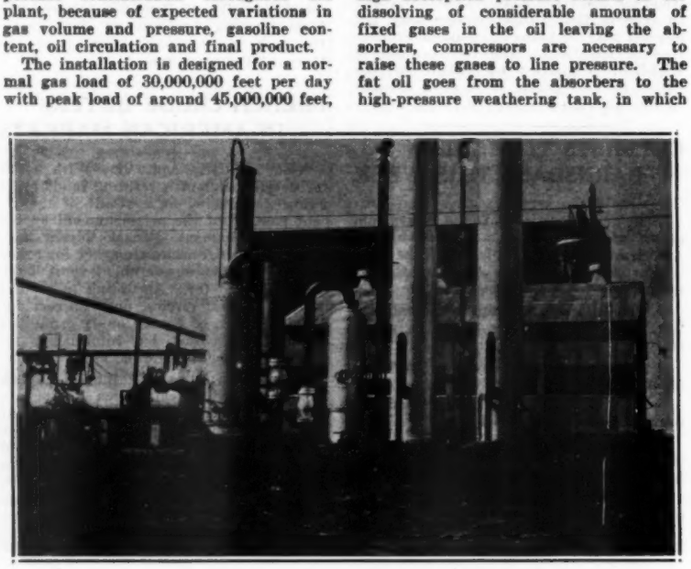
OPERATION OF NEW HIGH PRESSURE NORTH LOUISIANA GASOLINE PLANT

By Louis Weiss
Stearns-Roger Manufacturing Co.

An interesting high-pressure absorption plant was recently completed in the new Sugar Creek Field in northern Louisiana for the Louisiana Gas & Fuel Co., the Standard Oil Co. of Louisiana and the Triangle Drilling Co.

Extreme flexibility was a most important consideration throughout the plant, because of expected variations in gas volume and pressure, gasoline content, oil circulation and final product.

The installation is designed for a normal gas load of 30,000,000 feet per day with peak load of around 45,000,000 feet, at pressures of 500 pounds down to 350 pounds. To date the gas has averaged about 1 gallon per 1,000 feet. An unusual quantity of heavy drip reaches the plant, this material having an end-point of 460° F.



Battery of high pressure absorbers.

The gas first passes through a float-equipped scrubber, then to the absorbers. Each of these is 48 inches inside diameter by 30 feet high and have 16 frothing sections in the seamless, hammer-welded shells. These shells are of 1¼-inch plate with removable flat heads 5½ inches thick; heads being bolted to the shell top flanges with heavy alloy steel bolts. Residue gas passes out through another similar scrubber installed to protect the pipe line system to which all gas discarded by the plant goes at full plant pressure.

The double or two-stage weathering system is used in this plant. Since the high absorption pressure results in the dissolving of considerable amounts of fixed gases in the oil leaving the absorbers, compressors are necessary to raise these gases to line pressure. The fat oil goes from the absorbers to the high-pressure weathering tank, in which the oil level is held by a float control on the outlet. The pressure in this tank is held constant by a back pressure regulator.

On leaving the high-pressure weathering tank, the oil goes to the low-pressure weathering tank, in which the liquid level is controlled by a float connected to the steam supply of the fat oil pump, with back pressure controlled by regulator, set for 30 pounds.

About half the total fixed gases in the oil are freed in the high-pressure weathering tank, the amount being controlled by the pressure held on it. The balance of these fixed gases comes from the low-pressure weathering tank, due to the second drop in pressure, and also from the condensers. Uncondensed gases from the gasoline condensers go to the low-pressure weathering tank under their own pressure.

Recompressors

Recompressors consist of two 200 horsepower, direct connected gas engine driven units, with two-stage cylinders, the high-pressure compressors cylinders being equipped with variable clearance pockets. Suction for the low-pressure cylinders is from the low-pressure weathering tank and discharge is into the high-pressure weathering tank after passing through cooling sections.

Condensate resulting from these operations goes into the absorber oil in the weathering tank and from there into the distillation system. The high-pressure cylinders take suction from the high-pressure weathering tank and discharge into the transmission line.

The pressure carried in the high-pressure weathering tank is varied, in order to balance the load between the low and high-pressure compressors cylinders. Since this plan results in more than half of the fixed gases being recompressed from a high suction pressure, a considerable saving is made in the amount of power necessary.

Due to the topography of the plant site, the compressor building being considerably lower than the cooling tower, sight hoppers could not be installed in the water piping system at the compressors. To insure that operators would know of any undue rise in jacket water temperature, an alarm system was installed.

The low-pressure fat oil pumps take suction from the low-pressure weathering tank and force the fat oil through the heat exchangers and preheaters to the evaporator. From the evaporator the stripped oil passes to the surge tank, back through the heat exchangers and to the suction of the low-pressure lean oil pumps which put it through the cooling sections. The cooled oil is then picked up by the high-pressure lean oil pumps and returned to the absorbers.

The steam preheaters are mounted on structural steel supports directly above the heat exchangers to save space and simplify piping. They are elevated sufficiently above boiler high water level so that condensate returns by gravity direct to the boilers. This accomplishes a saving in water and reduces the frequency of boiler cleanings. The boilers are located approximately 265 feet away from the preheaters.

Vapors from the evaporator go to the dephlegmator, which consists of 24 passes of 2-inch copper bearing pipe lying in a horizontal plane in a flat wood box on top of the cooling tower, built along both sides and across one end of the structure. The 2-inch pipes are partly submerged in the water in the box. The box is covered with a roof composed of removable sections. The amount of submergence determines the temperature of the outgoing vapors. An automatic thermostatic control regulates the water supply to the box. In this simple manner a substantial portion of the plant's total heat load is liberated into atmosphere, easing the load on the cooling tower proper.

At the dephlegmator outlet gasoline vapor is separated from condensed steam

(Continued on Page 124)

REPORT SHOWS PROPERTIES OF LIQUEFIED PETROLEUM GASES

By R. M. O'Connell
Underwriters Laboratories*

The demand for a more stable grade of motor fuels and the development of more efficient processes used in their production have made it possible to produce liquefied petroleum gases for domestic and industrial use from this source on a commercial basis. It is evident that these products will be available as long as we have gasoline or other liquid hydrocarbons. The accompanying table shows some of the physical characteristics of these gases.

A study of the characteristics of propane and butane shows that they are especially suited in assisting to overcome some of the problems that have obstructed the more general distribution and use of gaseous fuels. They are readily transported as a liquid and can be converted easily into a gas at the point of consumption. At the present time these gases are being utilized in several major capacities.

In the form of liquefied gas, they are distributed to individual domestic and industrial consumers in steel cylinders. They are similarly supplied to communities for general distribution in gaseous form in pipe lines. The names of approximately 20 widely separated and actively distributed compressed gas systems of the domestic type appear in the List of Inspected Gas, Oil and Miscellaneous Appliances. Regulations for construction and installation of suitable containers and apparatus for use in large scale industrial and municipal applications are in the course of development, and systems for handling and utilizing the gases are having an increasing popularity.

Gas companies find these gases useful in enriching water gas or other gases of

(Continued on Page 125)

*Division engineer, Gases and Oils Department.

DISMANTLE WESTBROOK PLANT

California Co. of Texas is dismantling its small natural gasoline plant in Westbrook Field, Mitchell County, Texas. This company has no other gasoline units.

GULF COAST MARKETS SHOW LITTLE CHANGE

HOUSTON, Tex., Apr. 21.—With the exception of gasolines for spot movement locally there were no changes of consequence in the Gulf Coast refinery market the last week. Spot gasoline, however, took a turn for the worse and was available at the opening of the week from a quarter to a half cent under previously quoted prices.

Until now sellers have been holding a fairly firm control on this business and despite substantially lower quotations on bulk material and marginal contract movements spot sales have been maintained at a minimum of 5½ cents. Although sales on this basis comprise a comparatively small amount of the total volume of business, the weakening is taken as a reflection of the prolonged weakness of other gasolines.

Bulk gasolines Monday and Tuesday were being quoted from 4½ to 5½ cents depending on grades with marginal contracts bringing from 3½ to 3⅝ cents for U. S. Motor material. Movements continued somewhat slow even at these figures, although sellers have been encouraged by the fact the situation has been fairly steady for several weeks. No early change either way is expected in the near future.

Pale and red oils also indicated no trends with all viscosities apparently in a rut so far as prices and demand were concerned. Routine sales have been sufficient to prevent any great offerings of distress material and outwardly everything is about pegged at present levels.

Quotations on fuel oil and gas oils continued firm despite failure of important business to materialize. Few inquiries are being received for either of these products, but 65 cents remains absolute bottom for cargo fuel and 3⅛ cents for good gas oil.

RESEARCH AT UNIVERSITY

A number of research and experimental projects are being carried forward in the refinery laboratory of the School of Petroleum Engineering of the University of Oklahoma, under the direction of Fred W. Padgett, professor of petroleum engineering. The problems are in the following fields: Soap dispersions, properties of asphalts, effect of agitation on distillation, value of decolorizing and neutralizing clays of Oklahoma, polymerization and isomerization of hydrocarbons in the vapor condition, and the nature of petroleum waxes.

In the study of lubrication, special attention is being given to the effect of asphaltenes on oiliness. An extensive project is that of the properties of soap dispersions in petroleum oils. A large number of dispersions of pure soaps have been made and the individual dispersions are being studied in detail. The object of the investigation is to secure information concerning the properties where the purity of the soap is definitely known, and the presence of extraneous substances eliminated.

The first work on asphalts made in this laboratory was a comparison of the weathering properties of native asphalts of Oklahoma. The weathering properties were found to vary considerably but at least one product of exceptional weathering resistance was noted. The work also indicated that in the case of a series of products from the same source material, the degree of weathering was proportional to the degree of hardness. At the present time a study of asphalt from acid sludge is being made and products prepared which are stable and in some respects superior to native and other asphalts.

REFINERY BLAST KILLS TWO

WICHITA FALLS, Tex., Apr. 20.—C. R. Walker, helper, and J. A. Horne, repairman, died from injuries suffered last Thursday in an explosion in the cracking plant of the Panhandle Refining Co. R. K. Krull, in charge of the plant, was burned so severely that it was said he might not recover. The cause of the accident was not fixed.

REPLACEMENT JOB JUST COMPLETED AFTER OVERCOMING MANY OBSTACLES

By Nell Williams

HOUSTON, Tex., Apr. 20.—Houston Pipe Line Co. has just completed a replacement job on the Freeport loop of its Southwest Texas-Houston system which has been accomplished only after the overcoming of many obstacles. Although the replacement was not long, the work involved problems and difficulties as great but on a smaller scale as those in the laying of a major project.

A little more than 10,000 feet of new 12-inch pipe was put in on the line a short distance west of Freeport, Brazoria County, through an unusually low, marshy country. To make matters worse, before the work could be started, tidewater backed over the district last September to a depth of more than a foot and from that time to now it has not drained off.

After waiting for some time for possible dry weather, crews finally went to work and after slow, tedious efforts managed to drag in the pipe, weld the joints and ditch it. After the line had been entirely laid but before it was tied into the system, a number of leaks were indicated which necessitated a checking of all connections. To do this in the water covered country without raising the pipe was accomplished successfully but after slow, disagreeable work. Around each place under which was the joint, a dirt levee was built up above the water level. By small pumps, driven by 6 horsepower gas engines, dragged along the line, the water was pumped out from within each of these levees and a bell hole dug down to each connection.

With this done, the connections were checked and then covered over and the line tied into the main system.

View showing small gas engine driven pump pumping water out of bell hole around a joint on Houston Pipe Line Co.'s Freeport loop on its Southwest Texas-Houston system.

View of country through which Houston Pipe Line Co. laid 10,000 feet of new line. Circular levees built up around location of each joint are shown before the water was pumped out.

WINDSOR GAS FRANCHISE

CHATHAM, Ontario, Apr. 18. — The Windsor, Ontario, city council has provisionally granted a franchise to the Southern Ontario Gas Co. to distribute and sell natural gas in competition with the Windsor Gas Co., subsidiary of the Union Natural Gas Co., which at present supplies the Border Cities. The franchise gives the council the right to cancel the franchise if 5 miles of city mains are not laid within 18 months or if the supply is interrupted for three months. The franchise is conditional on a vote of the electors of Windsor at the next regular municipal election.

S. E. MANNING DIES

HOUSTON, Tex., Apr. 20.—S. E. (Red) Manning, head of the Houston Oil Fields Materials Co., Houston, Tex., died April 18 as a result of wounds received when a gun he was carrying was discharged accidentally. Mr. Manning was widely known among Gulf Coast oil men not only as an equipment man but because he also had been an active operator. Previously to entering the supply business he had been connected with the production department of the Humble Oil & Refining Co. One of his brothers, M. Manning, is superintendent of production, Gulf Coast division, for the Humble company.

HOLD ANNUAL I.P.A.A. CONVENTION APRIL 24

The Independent Petroleum Association of America will hold its annual meeting in Tulsa, April 24, at the Mayo Hotel, in the Crystal Ballroom. Independent oil operators from all the Mid-Continent states are expected to be present, as well as producers from other parts of the country.

The convention opens April 23 at 2 p. m. with a board of directors meeting to form the laws and the association's program for the coming year. On April 24 at 10 a. m. a general meeting will be held. Wirt Franklin, president of the association, will address the members reviewing the work of the past year. He will be followed by a report by Russell B. Brown, secretary of the association, and a report by Dudley Monk, treasurer. A report of the state divisions, by the president of each division will follow. The association has 10 state divisions including the Rocky Mountain and California districts.

At the afternoon session a report of the committee and an address by Senator Elmer Thomas of Oklahoma, followed by Representative Homer Hock of Kansas. The program for the coming year will be presented to the convention and the board of directors nominated and elected.

The annual banquet will be held at 7 p. m. in charge of James G. Cloud, president of the Oklahoma division. N. A. Gibson will be toastmaster. The principal speaker will be Harry H. Rogers, president of Exchange National Bank and president of the Oklahoma State Chamber of Commerce, who will talk on the "Effect of Oil on Industrial Welfare," and a "gridiron" program will follow, the topic being "Oil Relief."

TWO-CENT TAX ON GAS WHOLESALERS IN TEXAS

AUSTIN, Tex., Apr. 20.—After adopting the 2 per cent natural gas production tax with its cigaret tax addition earlier in the day, the house returned to the attack late Monday and levied a 2-cent per 1,000 feet flat tax on gas wholesalers. This levy was made in the revision of the occupation tax levies, in an amendment by Representative C. E. Farmer of Fort Worth. The amendment was adopted by a vote of 72 to 36, and the bill was passed finally by the house 92 to 27. It requires senate action. Based on 1930 production, the wholesale gas levy would bring in $4,317,000 per year additional taxes.

RUMANIA TO BUILD PIPE LINE

NEW YORK, Apr. 20.—The Rumanian minister of commerce and industry has approved plans for the construction of a gasoline pipe line from Rumanian refinery territory to tidewater at Constanza. The proposal awaits the approval of parliament, which is expected to take prompt and favorable action, and immediate inauguration of construction work is looked for.

GEORGE LEGH-JONES REPLACES U. deB. DALY

ST. LOUIS, Mo., Apr. 18.—George Legh-Jones, president of Shell Oil Co., temporarily has assumed the office of president of the Shell Petroleum Corp., St. Louis, and its associated companies, pending election of a new president. Mr. Legh-Jones succeeds U. deB. Daly, resigned. Both the Shell Oil Co. and the Shell Petroleum Corp. are subsidiaries of the Shell Union Oil Corp. of New York, a holding company.

DEATH OF FRANK P. FOX

INDIANAPOLIS, Ind., Apr. 21.—Frank P. Fox, 43 years of age, died here Sunday. The funeral was held today. Mr. Fox is credited with having opened the Bridgeport, Ill., Field and operated in the Creek County and Okmulgee Fields in Oklahoma about 1912. He was a son of the late George Fox of Pittsburgh, Pa., who was a noted inventor of oil well equipment.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

	Apr. 21		Apr. 14		Apr. 7	
OKLAHOMA (Group 3)—						
50-52 450 endpoint	.03¼		.03¼	.03½	.03¼	.03½
56-58 450 endpoint	.03⅜	.03¼	.03¼	.03½	.03¼	.03½
58-60 437 endpoint (U. S. Motor)	.03¼	.03¾	.03½	.04	.03⅝	04
60-62 437 endpoint	.03½	.04	.03½	.04	.03⅝	.04
60-62 400 endpoint	.03½		.03⅝	.04	.03½	.03¾
64-66 375 endpoint	.04		.04	.04¼	.03⅞	.04
68-70 360 endpoint	.04¼		.04¼	.04¼	.04	.04½
64-66 437 endpoint (blend)	.03¼		.03¼	.03½	.03¼	.03½
NORTH TEXAS—						
50-52 450 endpoint	.03¼		.03¼	.03½	.03¼	.03½
58-60 450 endpoint	.03⅜		.03¼		.03¼	
58-60 437 endpoint (U. S. Motor)	.03¼	.03½	.03⅝	.03½	.03¼	.03¾
60-62 400 endpoint	.03½	.03⅝	.03½	.04	.03⅝	.04
64-66 390 endpoint	.03⅝	.03¾	.03¾	.04	.03¾	.04
64-66 375 endpoint	.04		.03⅞	.04	.03⅞	.04
68-70 360 endpoint	.04¼		.04	.04¼	.04	.04¼
64-66 437 endpoint (blend)	.03¼	.03½	.03¼	.03½	.03¼	.03½
***NORTH LOUISIANA—**						
58-60 437 endpoint (U. S. Motor)	.03¾	.04	.03¾	.04	.03⅝	.04
***ARKANSAS—**						
58-60 437 endpoint (U. S. Motor)	.03⅝	.04	.03⅝	.04	.03⅝	.04
PENNSYLVANIA—						
52-54 Naphtha	.05		.05		.05¼	.05½
54-56 Naphtha	.05	.05¼	.05	.05¼	.05¼	.05½
58-60 Gasoline	.05¼	.05½	.05¼	.05½	.05½	.05¾
60 Gasoline	.05¼	.05¾	.05½	.05¾	.05¾	.06
62 Gasoline	.05½	.05¾	.05½	.06	.06	
64 Gasoline	.06		.06	.06½	.06½	.06¾
68-70 350 endpoint gasoline	.06½		.06¾	.07	.07	
CALIFORNIA—						
†54-58 437 endpoint (U. S. Motor) domestic	.03	.03½	.03½	.04½	.03½	.04½
†58-60 400 endpoint domestic gasoline	.04½	.05	.04½	.05	.04¾	.05½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.03	.03¼	.03¼	.03½	.03¼	.03½
56-58 450 endpoint	.03⅜	.03¼	.03¼		.03¼	.03½
58-60 437 endpoint (U. S. Motor)	.03¼	.03½	.03⅜		.03⅜	.04
60-62 400 endpoint	.03½	.03⅝	.03¼		.03½	.03¾
64-66 375 endpoint	.03⅞	.04	.03⅞	.04	.03⅞	.04
64-66 437 endpoint (blend)	.03¼		.03¼		.03¼	.03½
68-70 360 endpoint	.04	.04¼	.04		.04	.04½
GULF COAST (Export)—						
58-60 U. S. Motor	.04½		.04½		.04½	.05
60-62 400 endpoint	.04¾	.05	.04¾	.05	.04¾	.05
61-63 390 endpoint	.05¼		.05¼		.05⅜	.05½
64-66 375 endpoint	.05½		.05½		.05½	

*Louisiana, Arkansas, Mississippi and East Texas delivery. †For local consumption.

NATURAL GASOLINE

	Apr. 21		Apr. 14		Apr. 7	
OKLAHOMA (Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.02		.02¼		.02¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01⅝	.01¾	.02⅛		.02⅛	.02¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.01⅝		.02		.02	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅝		.01¾		.01⅞	.02
Grade C, 80-92, 375 e.p., rec. 78%	.01½		.01¾		.01¾	.02
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.02		.02¼		.02¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01⅝		.02⅛		.02⅛	.02¼
Grade B, 76-83.9, 375 e.p., rec. 85%	.01⅝		.02		.02	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅝		.01¾		.01⅞	.02
Grade C, 80-92, 375 e.p., rec. 78%	.01½		.01¾		.01⅞	.02
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.02⅛		.02¼		.02¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅝	.01¾	.02⅛		.02⅛	
Grade C, 80-92, 375 e.p., rec. 78%	.01¾		.02		.02	
CALIFORNIA—						
75-78 375-390 endpoint	.03	.04	.03¼	.04¼	.03½	.04¼
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.02		.02¼		.02¼	
Grade AA, 80-87.9, 375 e.p., rec. 90%	.01⅝		.02⅛		.02⅛	.02¼
Grade BB, 84-92, 375 e.p., rec. 85%	.01⅝		.01¾		.01⅞	.02

BURNING OIL

	Apr. 21		Apr. 14		Apr. 7	
OKLAHOMA (Group 3)—						
41-43 water white kerosene	.02½	.02¾	.02⅝	.02¾	.02⅝	.03
42-44 water white kerosene	.02¾	.03	.02¾	.03⅛	.02¾	.03⅛
NORTH TEXAS—						
41-43 water white kerosene	.02½	.02¾	.02½	.03	.02½	.03
40-41 water white kerosene	.02¼	.02½	.02⅜	.02½	.02⅜	.02½
***NORTH LOUISIANA—**						
41-43 water white kerosene	.03		.03		.03	.03¼
***ARKANSAS—**						
41-43 water white kerosene	.03	.03⅛	.03	.03¼	.03	.03¼
PENNSYLVANIA—						
43 Kerosene prime white	.04½		.04½		.04½	
45 Kerosene water white	.04½		.04½	.04⅝	.04½	.04⅝
46 Kerosene water white	.04⅝	.05	.04⅝	.05	.04¾	.05
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.04	.04½	.04¼	.04¾	.04¼	.04¾
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.02½	.02¾	.02½	.02¾	.02⅝	.02¾
42-44 water white kerosene	.02¾	.03	.02¾	.03	.02¾	.03
GULF COAST (Export)—						
41-43 prime white	.04¼		.04¼		.04¼	
44 water white	.05¼		.05¼		.05¼	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

	Apr. 21		Apr. 14		Apr. 7	
OKLAHOMA (Group 3)—						
Below 18 gravity Fuel Oil, per bbl.	.35	.40	.35	.40	.35	.40
18-22 Fuel Oil, per bbl.	.37½	.42½	.37½	.42½	.37½	.42½
20-22 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
22-26 Fuel Oil, per bbl.	.45	.50	.45	.55	.45	.55
24-26 Fuel Oil, per bbl.	.47½	.50	.50	.60	.50	.60
26-30 Fuel Oil, per bbl.	.50	.55	.55	.60	.57½	.65
28-30 Fuel Oil, per bbl.	.55	.65	.60	.70	.62½	.70
32-36 Gas Oil (industrial)	.01¼		.01⅜	.01½	.01½	.01⅝
32-36 Gas Oil (straw color, high cold test)	.01¼	.01⅜	.01½	.01⅝	.01⅝	.01⅞
32-36 Gas Oil (straw color, low cold test)	.01½	.01⅝	.02	.02⅛	.01⅞	.02⅛
36-38 Distillate	.02	.02¼	.02⅛	.02¼	.02⅛	.02¼
38-40 Straw Distillate	.02¼		.02¼	.02⅜	.02¼	.02⅜

*Fuel oils over 40 cold test generally 5 to 10 cents per barrel less.

NORTH TEXAS—						
Below 20 gravity Fuel Oil, per bbl.	.30	.35	.30	.35	.30	.35
24-26 Fuel Oil, per bbl.	.40	.45	.40	.45	.40	.45
32-36 Gas Oil (industrial)	.01⅛	.01¼	.01¼	.01½	.01⅜	.01⅝
38-40 Straw Distillate	.02	.02¼	.02⅛	.02¼	.02⅛	.02¼
***NORTH LOUISIANA—**						
18-20 Fuel Oil, per bbl.	.55	.60	.60	.70	.60	.70
30-32 Gas Oil (low cold test)	.02¼		.02⅜	.02½	.02⅜	.02½
***ARKANSAS—**						
33-36 Distillate	.02½		.02½	.02¾	.02½	.02¾
30-32 Gas Oil	.02⅛	.02¼	.02⅛	.02¼	.02⅛	.02¼
16-22 Refinery Fuel Oil, per bbl.	.55		.60	.65	.60	.65
GULF COAST (South Texas)—						
Gas Oil	.03		.03	.03⅛	.03	.03⅛
Bunker C. Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.65	.70
Bunker C Fuel (small lots)	.90		.90		.90	
PENNSYLVANIA—						
30-34 Fuel Oil	.02¾		.03		.03	
36-40 Fuel Oil	.02⅞	.03	.03	.03¼	.03	.03¼
CALIFORNIA—						
33-36 Distillate	.02	.02½	.02	.02½	.02	.02½
26-32 Distillate	.01¾	.02	.01¾	.02	.01¾	.02
15-19 Fuel Oil, Bunker (at tidewater), bbl.	.60	.90	.60	.90	.55	.90
15-19 Fuel Oil (cargo lots, at tidewater), bbl.	.55	.85	.55	.85	.55	.80
†15-19 Fuel Oil, f.o.b. tank cars	.30	.70	.30	.70	.25	.70
27 plus Diesel, per bbl.	.70	.95	.75	1.00	.75	1.00
30-34 Gas Oil	.70	.95	.75	1.00	.80	1.10
CHICAGO DISTRICT (Based on Group 3)—						
18-22 Fuel Oil, per bbl.	.35	.40	.35	.40	.37½	.45
22-26 Fuel Oil, per bbl.	.47½	.55	.47½	.55	.50	.55
28-30 Fuel Oil, per bbl. (zero)	.60	.70	.60	.70	.65	.70
32-36 Gas Oil (industrial)	.01⅛	.01¼	.01¼	.01½	.01½	.01¾
32-36 Gas Oil (zero)	.02	.02¼	.02	.02¼	.02	.02¼
38-40 Straw Distillate	.02¼	.02⅜	.02⅛	.02¼	.02¼	.02½

*Louisiana, Arkansas, Mississippi and East Texas delivery. †Lowest priced fuel oil has high sulphur content.

LUBRICATING OIL AND WAX

	Apr. 21		Apr. 14		Apr. 7	
OKLAHOMA (Group 3)—						
100 vis., 2 color, 20-25 cold test	.05		.05		.05	
100 vis., 3 color, 20-25 cold test	.04¾	.05	.04¾	.05	.04¾	.05
150 vis., 3 color, 20-25 cold test	.07		.07		.07	
150 vis., 4 color, 20-25 cold test	.06½		.06½		.06½	
180 vis., 3 color, 23-28 cold test	.08½		.08½		.08½	
180 vis., 4 color, 23-28 cold test	.08		.08		.08	
180 vis., 5 color, 23-28 cold test	.07¼	.07½	.07¼	.07½	.07¼	.07½
200 vis., 3 color, 23-28 cold test	.09½	.10	.09½	.10	.09½	.10
200 vis., 4 color, 23-28 cold test	.09½		.09½		.09½	
200 vis., 5 color, 23-28 cold test	.08½	.09	.08½	.09	.08½	.09
240 vis., 3 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 4 color, 25-30 cold test	.12¼	.12½	.12¼	.12½	.12¼	.12½
240 vis., 5 color, 25-30 cold test	.11¼	.11½	.11¼	.11½	.11¼	.11½
280 vis., 3 color, 25-30 cold test	.15½		.15½		.15½	
280 vis., 4 color, 25-30 cold test	.14½		.14½		.14½	
280 vis., 5 color, 25-30 cold test	.13½		.13½		.13½	
Cylinder Stocks:						
600, steam refined, light green	.05	.06	.05	.06	.05	.06
600, steam refined, dark green	.03½	.04½	.03½	.04½	.03½	.04½
190-200 vis., D color, Bright Stocks	.20		.20		.20	
150-160 vis., D color, Bright Stocks 0-10 c.t.	.16	.17	.16	.17	.17	
150-160 vis., D color, Bright Stocks 10-25 c.t.	.15	.16	.15	.16	.16	
150-160 vis., D color, Bright Stocks 25-40 c.t.	.14½	.15½	.14½	.15½	.15½	
150-160 vis., E color, Bright Stocks	.14	.15	.14	.15	.15	
Waxes:						
124-126 White Crude Scale Wax	.01¾	.02	.01⅞	.02	.01¾	.02

All bright stock prices are for domestic movement.

PENNSYLVANIA—						
34 Neutral	.05½		.05½	.06	.05½	.06
34 Sundebloom	.05½		.05½		.05½	
36 Miners' Neutral	.05½		.05½		.05½	
150, 3 color	.17½	.18	.18	.18½	.18	.18½
180, 3 color	.19	.20	.19	.20½	.19	.20
200, 3 color	.22	.22¼	.22	.22½	.22½	
220, 3 color	.24½	.27	.24½	.27	.25	.27
600, steam refined	.08¼	.08¾	.08¼	.08¾	.08¼	.08¾
650, steam refined	.11½	.12	.12	.12½	.12	.12½
600, Pennsylvania Flash	.12	.14	.12	.14	.12	.14
630, Pennsylvania Flash	.18		.18		.18	
600, E filtered	.11½	.12½	.12	.13	.12	.13
600, D filtered, Oil City	.17		.17		.16½	.17
Pennsylvania Bright Stocks below 35 c.t.	.18	.18½	.18½	.19	.18½	.19
Pennsylvania Bright Stocks above 35 c.t.	.17¾		.18		.18	.19
*122-124 White Crude Scale Wax	.02⅛	.02¼	.02¼		.02¼	
124-126 White Crude Scale Wax	.02¼		.02¼		.02¼	

*At New York.

GULF COAST (South Texas)—						
100 vis., 2-2½ color, pale oil	.06	.06¼	.06	.06¼	.06	.06¼
200 vis., 3 color, pale oil	.08¼	.08½	.08¼	.08½	.08¼	.08½
300 vis., 3 color, pale oil	.09½	.09¾	.09½	.09¾	.09½	.09¾
500 vis., 3½ color, pale oil	.10¾	.11	.10¾	.11	.10¾	.11
750 vis., 3½ color, pale oil	.12¼	.12½	.12¼	.12½	.12¼	.12½
1,200 vis., 3½ color, pale oil	.14¾	.15	.14¾	.15	.14¾	.15
2,000 vis., 4 color, pale oil	.15¾	.16	.15¾	.16	.15¾	.16
200 vis., 5-6 color, red oil	.07½	.07¾	.07½	.07¾	.07½	.07¾
300 vis., 5-6 color, red oil	.08¾	.09	.08¾	.09	.08¾	.09
500 vis., 5-6 color, red oil	.10	.10¼	.10	.10¼	.10	.10¼

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

750 vis., 5-6 color, red oil	.11	.11¾	.11	.11¾	.11	.11¾
1,200 vis., 5-6 color, red oil	.13¾	.14	.13¾	.14	.13¾	.14
2,000 vis., 6 plus color	.15¾	.16	.15¾	.16	.15¾	.16
CALIFORNIA—						
130 vis., 2½-3 color	.09	.09½	.09	.09½	.09	.09½
200 vis., 2½-3 color	.10	.10¾	.10	.10¾	.10	.10¾
300 vis., 3-3½ color	.10¾	.11½	.10¾	.11½	.10¾	.11½
350 vis., 3½-4 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
400 vis., 3½-4 color	.12¼	.12¾	.12¼	.12¾	.12¼	.12¾
Red Neutral:						
200 vis., 4½-5 color	.09½	.10	.09½	.10	.09½	.10
300 vis., 5-6 color	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
400 vis., 5-6 color	.11	.12	.11	.12	.11	.12
500 vis., 4½-5 color	.12¼	.13	.12¼	.13	.12¼	.13
500 vis., 5-6½ color	.12	.12¾	.12	.12¾	.12	.12¾
600 vis., 6½ plus color	.13	.14	.13	.14	.13	.14

Note—Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK (BAYONNE) REFINERY PRICES

	Apr. 21		Apr. 14		Apr. 7	
Gasoline, U. S. Motor, 58-60, 437 e.p.	.06⅜	.07½	.06¾	.08	.06½	.08
Kerosene, water white, 41-43	.05¾	.06	.05¾	.06	.05¾	.06
*Fuel Oil, Bunker "C," 41-43	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	1.75		1.75		1.75	
Gas Oil, 28 gravity plus	.04¼	.05¼	.04¼	.05¼	.04¼	.05¼
25 pale Paraffin Oil, tank car	.10¼		.10¼		.10¼	
28 pale Paraffin Oil, tank car	.07¼		.07¼		.07¼	
280 red Paraffin Oil, tank car	.12½		.12½		.12½	
250 red Paraffin Oil, tank car	.11½		.11½		.11½	
225 red Paraffin Oil, tank car	.10		.10		.10	
200 red Paraffin Oil, tank car	.09¼		.09¼		.09¼	
Domestic heating oil, min. 32 grav., tank car	.04½		.04½		.04½	
Refined Wax:						
120-122 a.m.p., per lb.	.03		.03		.03	
125-127 a.m.p., per lb.	.03⅛		.03¼		.03¼	
130-132 a.m.p., per lb.	.03⅝		.03⅝		.03⅝	
133-135 a.m.p., per lb.	.04¼		.04⅝		.04⅝	
135-137 a.m.p., per lb.	.04⅝		.04¾		.04¾	
Petrolatum in barrels in carload lots, per pound:						
Dark Green	.01¾		.01¾		.01¾	
Amber	.03		.03		.03	
Extra Amber	.03¼		.03¼		.03¼	
Cream	.06		.06		.06	
Lily White	.06¾		.06¾		.06¾	
Snow White	.08		.08		.08	

*Lighterage 5 cents a barrel extra. †Lighterage 6.5 cents a barrel.

NEW YORK (BAYONNE) EXPORT PRICES

	Apr. 21		Apr. 14		Apr. 7	
600, steam refined cylinder stocks, in bbls.	.16¼		.16¼		.16¼	
635, steam refined	.17		.17		.17	
650, steam refined	.20		.20		.20	
600, Pennsylvania Flash	.20	.21	.21		.21	
630, Pennsylvania Flash	.26		.26		.26	
600, Warren E	.20		.20		.20	
600, Oil City E	.19		.19		.19	
Light 140-150 Bright Stocks	.26½		.26		.26	
Dark 140-150 Bright Stocks	.24½		.24		.24	

LOS ANGELES EXPORT PRICES

	Apr. 21		Apr. 14		Apr. 7	
Kerosene, water white	.04½	.05½	.04½	.05¼	.04½	.05¼
*U. S. Motor Gasoline, 53-55, 437 e.p.	.04	.04¾	.04	.05	.04	.05
*58-62, 400 endpoint gasoline	.04½	.05½	.04½	.05½	.04½	.05½

*For coastwise shipment.

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Rusk County, Tex.* (Apr. 6, 1931)	$ .25
Corsicana heavy (Mar. 10, 1931)†	.45
Other fields	See gravity table

*Posted by Panola Pipe Line Co. For Humble Oil & Refining Co. and Magnolia Petroleum Co. posted prices on East Texas, see gravity table. †Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties..See gravity table

WEST TEXAS

Iatan*	Same as North Texas
Crane-Upton-Crockett, Howard and Glasscock and Ector (Apr. 21, 1931)†	$ .30
Winkler and Pecos, Tex. (Apr. 21, 1931)†	.35
Lea County, N. Mex. (Apr. 21, 1931)	.325

*Includes Westbrook Field. †Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover (all grades) (Mar. 10, 1931)	$ .45
Carterville, Sarepta and Cotton Valley, below 36 gravity	See gravity table
March 10, 1931	.45
Urania (Oct. 30, 1930)	.75
Calion, heavy (Mar. 10, 1931)	.45
East El Dorado (Mar. 10, 1931)	.45
Other fields	See gravity table

Note—Smackover and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado posted by Gulf Refining Co. and Magnolia Petroleum Co.; Calion posted by Gulf Refining Co.

GULF COAST

Grade A (April 21)*	$ .70
Grade B, 25° and upward	See gravity table
Jennings, La. (Oct. 30, 1930)†	.80
Refugio (light)	Same as Grade B
Refugio (heavy) (Jan. 14)*	.69
Markham (Mar. 10, 1931)‡	.50
High Island (Oct. 30, 1930)†	.75

*Humble Oil & Refining Co. †Gulf Refining Co. of Louisiana. ‡Texas Pipe Line Co.

ROCKY MOUNTAIN STATES
Ohio Oil Co.-Midwest Refining Co.

Iles (Mar. 7, 1931):	
33 gravity and above	$ .72
Under 33 gravity	.50
Fort Collins (Mar. 5, 1931)	.58
Florence (Mar. 5, 1931)	.47
Wellington (Mar. 5, 1931)	.48
Dutton Creek (Oct. 28, 1930)	1.01
Rock Creek, Wyo. (Mar. 5, 1931)	.66
Salt Creek	See gravity table
Big Muddy (Mar. 5, 1931)	.65
Grass Creek, heavy (July 27, 1928)	.90
Grass Creek, light (Mar. 5, 1931)	.90
Elk Basin (Mar. 5, 1931)	.90
Lance Creek (Mar. 5, 1931)	.98
Poison Spider (Mar. 5, 1931)	.70
Notches (Mar. 14, 1927)	.65
Hudson (Mar. 5, 1931)	.35
Lander (Mar. 5, 1931)	.40
Rex Lake (Feb. 22, 1930)	1.10
Osage (Nov. 1, 1930)	.85
Lost Soldier (Mar. 5, 1931)	.55
Hamilton Dome (Mar. 14, 1927)	.85
Greybull (Oct. 28, 1930)	1.25
Torchlight (Oct. 28, 1930)	1.25
Cat Creek (Mar. 5, 1931)	.90
Pondera (Mont.) (Mar. 12, 1931)	1.00
Sunburst (Mont.) (Mar. 12, 1931)	1.10
Hogback (N. Mex.) (Mar. 5, 1931)	1.05
Artesia (N. Mex.) (Mar. 10, 1931)	.40
Lea County, N. Mex. (Apr. 21, 1931)	.325
Border, Mont.	1.55
Red Coulee, Alberta	1.55

Note—Salt Creek, Osage, Cat Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin, Lost Soldier posted by Producers & Refiners Corp. Artesia posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Ohio Oil Co. ceased posting Artesia on March 5, 1931. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by the Continental Oil Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (April 21, 1931)*	$ .53
Luling (Mar. 10, 1931)†	.4
Mirando (April 21, 1931)*	.60
Pettus (April 21, 1931)*	.75
Salt Flat (April 21, 1931)*	.53
Thrall‡	
Lytton Springs (Lockhart)	See gravity table
Dobrowolski (Oct. 25, 1930)‖	
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01
Somerset (Oct. 25, 1929)¶	
Same as Mid-Continent gravity scale up to and including 38-38.9° at	1.01

*Posted by Humble Oil & Refining Co. †Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. ¶Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products Co. ‖Pioneer Oil & Refining Co.

EASTERN STATES
Joseph Seep Purchasing Agency
(Effective Nov. 12, 1930)

Penna Grade Oil in National Transit Lines (Pennsylvania)	$1.85
Penna Grade Oil in Southwest Pennsylvania Lines (Pennsylvania)	1.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.70

(Continued on Page 118)

CRUDE OIL GRAVITY TABLE

Gravity—	Oklahoma, Kansas, North Central, East Central Texas 1	Ranger, North Texas and Cooke County, Texas 2	East Texas 3	North Louisiana and Arkansas 4	Carson and Hutchinson Counties, Texas 5	Gray County, Texas 6	Grade B Gulf Coast and Refugio, Texas 7	Salt Creek, Wyoming 8	Stephens, Arkansas 9
Below 25	....	....	....	....	....	....	.60	....	....
25 to 25.9	....	....	....	....	....	....	.61	....	....
26 to 26.9	....	....	....	....	....	....	.63	....	....
27 to 27.9	....	....	....	....	....	....	.65	....	....
28 to 28.9	....	....	....	....	....	....	.67	....	....
Below 29	.43	.33	.43	.43	....	....	....	....	.54
29 to 29.9	.45	.35	.45	.45	....	....	.69	.45	.56
30 to 30.9	.47	.37	.47	.47	....	....	.71	.47	.62
31 to 31.9	.49	.39	.49	.49	....	....	.73	.49	.65
32 to 32.9	.51	.41	.51	.51	....	....	.75	.51	.70
33 to 33.9	.53	.43	.53	.53	....	....	.77	.53	....
34 to 34.9	.55	.45	.55	.55	.30	.33	.79	.55	....
35 to 35.9	.57	.47	.57	.57	.32	.35	.81	.57	....
36 to 36.9	.59	.49	.59	.59	.34	.37	....	.59	....
37 to 37.9	.61	.51	.61	.61	.36	.39	....	.61	....
38 to 38.9	.63	.53	.63	.63	.38	.41	....	....	....
39 to 39.9	.65	.55	.65	.65	.40	.43	....	....	....
40 and above	.67	.57	.67	.67	.42	.45	....	....	....

Column 1—Stanolind Crude Oil Purchasing Co. posted above prices on March 5, effective in Kansas, Oklahoma, North Texas, Central Texas and East Central Texas, where it purchases oil. Magnolia Petroleum Co. posted same day but with these differences: Below 26 degrees, 40 cents; 26-26.9 degrees, 41 cents; 27-27.9 degrees, 42 cents; 28-28.9 degrees, 43 cents. Tidal Refining Co. and Tidal-Western Oil Corp. adopted new price schedule March 5. Mid-Continent Petroleum Corp., Continental Oil Co., H. F. Wilcox Oil & Gas Co., Eason Oil Co., Standard Oil Co. of Kansas, Sinclair Refining Co., White Eagle Oil Corp. and Producers Oil Co. met the price on March 6, Champlin Refining Co. on March 7, Carter Oil Co., The Texas Company, Humble Oil & Refining Co., Empire Pipe Line Co., Gypsy Oil Co. and Gulf Pipe Line Co. met Stanolind prices on March 10, Pure Oil Co. posted same schedule in Van, Texas, Pool, March 5.

Column 2—Posted by Humble Oil & Refining Co., April 21. Met by Stanolind Crude Oil Purchasing Co., April 21.

Column 3—Magnolia Petroleum Co., March 26, 1931; Humble Oil & Refining Co., April 21, 1931.

Column 4—Standard Oil Co. of Louisiana and The Texas Company posted March 10. Standard prices apply to Caddo, Homer, Haynesville, Bull Bayou, Sabine, Crichton, De Soto, El Dorado, Cotton Valley, Sarepta and Carterville.

Column 5—Humble Oil & Refining Co., April 21. Other companies 5 cents per barrel higher on each grade based on posted prices of March 10.

Column 6—Humble Oil & Refining Co., March 21. Other companies 5 cents per barrel higher on each grade, based on posted prices of March 10.

Column 7—Humble Oil & Refining Co., March 21. Gulf prices range from 69 cents for below 25 gravity up to $1.01 for 40 gravity and above (2 cents differential for each degree upward) based on posted prices of October 30, 1930.

CALIFORNIA CRUDE OIL PRICES

(Posted by Union Oil Co. March 30 and the Standard Oil Co. of California March 31)

	Alamitos Hts., Signal Hill, Seal Beach, Torrance, Athens, Rosecrans, Dominguez, Santa Fe Springs, Montebello, Beach, Huntington, East Coyote, Richfield, Brea-Olinda	Santa Paula	Orcutt	Coalinga, McKittrick, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, Lost Hills
11 to 13.9	....	....	....	$.50
14 to 14.9	$.65	$.60	$.55	.55
15 to 15.9	.65	.60	.55	.55
16 to 16.9	.65	.60	.55	.55
17 to 17.9	.65	.60	.55	.55
18 to 18.9	.65	.60	.55	.55
19 to 19.9	.65	.60	.55	.55
20 to 20.9	.65	.58	.52	.53
21 to 21.9	.62	.56	.51	.51
22 to 22.9	.59	.53	.49	.49
23 to 23.9	.56	.50	.47	.47
24 to 24.9	.53	.47	.45	.45
25 to 25.9	.50	.44	.43	.43
26 to 26.9	.47	.41	.41	.41
27 to 27.9	.44	.38	.39	.39
28 to 28.9	.41	.35	.37	.37
29 to 29.9	.38	....	.35	.35
30 to 30.9	.35	....	....	....

For the time being the Union Oil Co. and the Standard Oil Co. will not post a schedule of crude oil prices for the Playa del Rey and Kettleman Hills Fields.

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns April 21

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Chicago	14.0	14.0	3.0	9.0
Decatur, Ill.	14.4	14.4	3.0	9.0
E. St. Louis	13.7	13.7	3.0	8.2
Joliet	14.4	14.4	3.0	9.0
Peoria	14.4	14.4	3.0	9.0
Quincy	14.2	14.2	3.0	8.8
Davenport, Ia.	14.5	14.5	3.0	9.3
Des Moines	13.5	13.5	3.0	9.3
Keokuk	14.5	14.5	3.0	9.3
Sioux City	13.1	13.1	3.0	8.9
Duluth, Minn.	15.5	15.5	3.0	9.9
Mankato	15.1	15.0	3.0	9.7
Minneapolis	15.2	15.2	3.0	9.9
La Crosse, Wis.	16.2	16.2	4.0	10.0
Milwaukee	15.1	15.1	4.0	8.9
Madison	15.3	15.3	4.0	9.1
Detroit, Mich.	14.8	14.8	3.0	10.7
Grand Rapids	14.7	14.7	3.0	10.6
Saginaw	14.9	14.9	3.0	10.8
Evansville, Ind.	15.1	15.1	4.0	9.9
Indianapolis	15.3	15.3	4.0	10.1
South Bend	15.4	15.4	4.0	10.2
Fargo, N. D.	15.0	15.0	3.0	11.9
Huron, S. D.	16.3	16.3	4.0	10.7
Sioux Falls	15.5	13.9	4.0	10.4
K. C., Mo.	13.9	13.9	3.0	7.6
Springfield*	13.9	13.9	3.0	8.5
St. Louis*	10.9	10.9	2.5	8.3
St. Joseph	13.5	14.5	3.0	7.5
Wichita, Kans.	12.8	12.8	3.0	7.8
Bartlesville, Ok.	13.0	13.0	5.0	7.6

*State tax 2 cents, remainder city tax.

Stanolind Blue gasoline, 1 cent off tank price posted for regular motor grade.

Effective April 15—Discounts on Q.D.A. on 1,000 gallons or more per month throughout territory: Red Crown Ethyl gasoline, 3 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind blue gasoline, 1 cent off tank wagon price.

Discount in Chicago division on 1,000 gallons or more per month: Red Crown Ethyl gasoline, 4 cents off tank wagon price; Red Crown gasoline, 3½ cents off tank wagon price; Stanolind Blue gasoline, 2 cents off tank wagon price.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

PACIFIC COAST TERRITORY

	Gasoline: Wh'ls'e price	Gasoline: Retail* price	Gasoline: Incl'ds tax of	Kero. tank wagon
Fresno	15.0	12.0	3.0	17.0
San Francisco	15.0	12.0	3.0	15.5
Los Angeles	13.5	10.5	3.0	15.5
Reno, Nev.	12.0	19.0	4.0	19.0
Portland, Ore.	17.5	14.5	4.0	16.5
Seattle, Wash.	17.0	14.0	5.0	16.5
Tacoma	17.0	14.0	5.0	16.5
Spokane	22.0	20.0	5.0	20.5
Phoenix, Ariz.	18.5	20.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 6-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 3 cents plus a 2-cent special temporary discount subject to withdrawal at any time.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	15.0	17.6	2.0	15.6
New York*	15.3	15.3	2.0	14.3
Buffalo	15.8	15.8	2.0	14.8
Rochester	16.0	16.0	2.0	14.0
Syracuse	16.8	16.8	2.0	14.8
Boston, Mass.	15.5	15.5	2.0	13.5
Augusta, Me.	15.8	15.8	4.0	14.8
Manch'tr, N. H.	18.4	18.4	4.0	14.0
Burlington, Vt.	19.3	19.3	4.0	15.3

*Prices in steel barrels.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	13.0	8.0
V.M.&P. naphtha	14.0	9.5
Cleaners' naphtha	16.2	11.0
Stanisol	16.2	11.0

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

All dumps of 50 gallons or more ..... .07

Note—Outside Chicago furnace oils discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	18.0	18.0	6.0	12.5
Augusta	18.0	20.0	6.0	14.0
Macon	18.0	20.0	6.0	13.0
Savannah	18.0	18.0	6.0	12.0
Birm'ham, Ala.	17.0	19.0	5.0	17.0
Mobile	17.0	19.0	4.0	13.0
Montgomery	17.0	17.0	4.0	13.5
Clarks'le, Miss.	18.0	20.0	5.0	13.5
Jackson	18.0	18.0	5.0	11.0
Natchez	18.0	20.0	5.0	13.5
Gulfport	16.0	16.0	5.0	13.5
Vicksburg	16.0	18.0	5.0	11.0
Jack'ville, Fla.	17.0	19.0	6.0	12.0
Miami	18.0	20.0	6.0	13.0
Pensacola	16.0	18.0	6.0	13.0
Tampa	17.0	17.0	5.0	12.0
Lexington, Ky.	17.0	18.0	5.0	12.0
Covington	16.0	17.0	5.0	11.0
Louisville	16.0	17.0	5.0	11.0
Ashland	17.0	19.0	5.0	13.0
Paducah	17.0	18.0	5.0	11.0
Bowling Green.	19.0	21.0	5.0	14.5
Corbin	18.0	19.0	5.0	15.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery, Birmingham and Mobile state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Atl'tic City, N.J.	14.2	16.2	3.0	11.5
Newark	13.2	15.5	3.0	10.5
Annapolis, Md.	16.0	17.0	4.0	11.0
Baltimore	15.3	16.3	4.0	9.5
Cumberland	17.0	18.0	4.0	12.0
Wash'gton, D.C.	13.7	14.7	2.0	10.7
Danville Va.	17.8	18.8	5.0	11.8
Norfolk, Va.	16.3	17.3	5.0	10.0
Petersburg	17.3	18.3	5.0	11.3
Roanoke	18.0	17.0	5.0	12.0
Richmond	16.7	17.7	5.0	10.7
Charles'n, W.Va.	16.5	17.5	4.0	11.5
Keyser	17.1	18.1	4.0	13.1
Parkersburg	15.3	16.3	4.0	10.3
Wheeling	16.4	17.4	4.0	11.4
Charlotte, N. C.	17.0	18.0	6.0	11.0
Hickory	19.6	20.6	6.0	12.6
Mt. Airy	19.5	20.5	6.0	12.5
Salisbury	19.2	18.0	6.0	13.5
Charleston, S.C.	17.3	18.3	6.0	10.3
Columbia	19.2	20.3	6.0	13.2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers, except in Washington, D. C., and in Maryland where discount is 3 cents.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	15.0	18.0	4.0	10.0
Fort Worth	13.0	15.0	4.0	10.0
Houston	14.0	18.0	4.0	11.0
San Antonio	14.0	18.0	4.0	10.0
El Paso	14.0	18.0	4.0	12.0
Texarkana	16.0	16.0	4.0	11.0
Muskogee, Okla.	13.0	16.0	5.0	8.0
Okla. City	11.0	13.0	5.0	8.0
Tulsa	13.0	16.0	5.0	8.0
Ft. Smith, Ark.	15.0	16.0	6.0	11.0
Little Rock	17.0	18.0	6.0	11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Denver, Colo.	15.0	18.0	4.0	12.5
Pueblo	13.0	16.0	4.0	13.0
Grand Junction	16.0	19.0	4.0	16.0
Casper, Wyo.	15.0	18.0	4.0	10.0
Cheyenne	16.0	19.0	4.0	11.5
Butte, Mont.	17.0	20.0	5.0	16.0
Billings	20.0	22.0	5.0	14.5
Great Falls	20.0	22.0	5.0	16.0
Helena	20.0	23.0	5.0	16.0
Salt Lake, Utah*	13.0	17.0	3.5	16.0
Albu'que, N. M.	16.0	20.0	5.0	14.0
Boise, Idaho†	21.5	....	5.0	18.0
Twin Falls‡	21.5	....	5.0	18.0

*Less 4 cents. †Less 3 cents. ‡Less 4½ cents.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	*12.0	*14.0	...	12.0
Philadelphia	*12.0	*14.0	...	12.0
Scranton	*12.0	*14.0	...	12.0
Allentown	*12.0	*14.0	...	12.0
Altoona	*12.0	*14.0	...	12.0
Erie	*12.0	*14.0	...	12.0
Dover, Del.	15.0	17.0	3.0	12.0
Wilmington	15.0	17.0	3.0	12.0
Springf'd, Mass.	14.5	16.5	2.0	11.0
Fall River	14.1	16.1	2.0	11.0
Worcester	14 3	16 3	2.0	11.0
Boston	13.5	15.5	2.0	11.0
Providence, R.I.	13.7	15.7	2.0	11.0
Hartford, Conn.	14.5	16.5	2.0	10.0
New Haven	14.6	16.6	2.0	10.0

*Does not include tax of 3 cents in Pennsylvania. Pennsylvania tax is collected by the dealer and paid by him direct to the State. Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	15.5	16.5	6.0	12.0
Baton Rouge	15 5	16.5	5.0	12.0
Alexandria†	16.5	17.5	6.0	12.0
Lafayette*	16 5	17.5	6.0	12.0
Lake Charles*	16 5	17.5	6.0	12.0
Shreveport	15.5	16.5	5.0	12.0
Knoxville, Tenn.	18.0	19.0	5.0	13.5
Memphis	15.0	16.0	5.0	10.0
Chattanooga	17 5	18 5	5.0	13.0
Nashville	17.0	18.0	5.0	12.5
Bristol	18.5	19.5	5.0	14.0
Lt. Rock, Ark.	16.5	17.5	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Gasoline price at Alexandria includes 1-cent tax in parish of Rapides.

Two-cent discount off gasoline tank wagon price to dealers and commercial accounts.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Ohio points*	15.0	16.0	4.0	†13.0

*Dealers and commercial accounts 2 cents under tank wagon.

†Service station price 14 cents.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Incl'ds tax of	Kero. tank wagon
Omaha	15.25	17.25	4.0	9.25
McCook	15.75	18.75	4.0	10.75
Norfolk	15.75	17.25	4.0	9.75
N. Platte	16.75	18.75	4.0	10.50
Scottsbluff	16.00	16.00	4.0	10.25

TANK WAGON CHANGES

Standard Oil Co. of Louisiana reduced the gasoline tank wagon and station prices one-half cent in Tennessee, Louisiana and Arkansas April 11.

Standard Stations, Inc., posted retail prices as follows April 13: Spokane, Wash., 20 cents; Tacoma, Wash., 14 cents; and on April 16, Phoenix, Ariz., 20 cents.

Continental Oil Co. reduced the gasoline tank wagon and station prices 1 cent April 13 in Denver, Colo.

Atlantic Refining Co. advanced the gasoline station price 1 cent in Fall River, Mass., to 16 cents March 31 and advanced the kerosene price throughout Massachusetts and Rhode Island to 11 cents March 27.

On April 6 the gasoline tank wagon and station prices were reduced to 16 cents and 18 cents in Pensacola, Fla. On April 7 the gasoline station price was reduced to 17 cents in Tampa, Fla., and on April 14 the gasoline station price was reduced to 17 cents in Montgomery, Ala.

Standard Oil Co. (Kentucky) posted the gasoline tank wagon at 18 cents and the station price at 16 cents in Atlanta, Ga., April 8. On the same date the tank wagon and station prices were reduced to 13 cents each in Jackson, Miss.

Continental Oil Co. reduced the gasoline tank wagon and station prices 1 cent in Denver, Colo., to 17 cents and 20 cents April 17. On April 19 these prices were advanced to 15 cents and 18 cents in Butte, Mont.

CRUDE OIL PRICE CHANGES

The American Oil & Refining Co. of Wichita Falls on Saturday, April 18, posted new prices as follows: 37° and below, 47 cents; 38-38.9°, 49 cents; 39° and above, 49 cents.

The Humble Oil & Refining Co. on March 21 posted Oklahoma-Kansas and East Central Texas prices for East Texas crude, beginning at 43 cents for below 29°, 45 cents for 30°, with a 2-cent differential for each degree upward to 40 and above, at 67 cents. This means an average posted price of 65 cents per barrel for Rusk-Gregg Counties crude, and is the same price schedule as that of the Magnolia Petroleum Co. posted March 26. The Humble reduced its prices for Ranger, North Texas and Moran crude 10 cents for each degree, or 33 cents for below 29°, 35 cents for 29°, with a 2-cent differential for each degree upward to 40 and above, which is 57 cents. The Humble cut Gray County crude 5 cents per barrel on each grade; Hutchinson and Carson Counties 8 cents per barrel on each grade; Crane, Crockett, Upton, Ector, Glasscock and Howard Counties crudes 5 cents per barrel or to 30 cents; Winkler and Pecos Counties 5 cents per barrel, or to 35 cents, and Lea County, New Mexico 7½ cents, or to 32½ cents. Gulf Coast Grade A, 10 cents; Grade B and Refugio, 9 to 20 cents; Mirando, 9 cents; Darst Creek and Salt Flats, 7 cents; Pettus, 20 cents.

The Panhandle Refining Co. of Wichita Falls, Tex., on April 21 posted a flat price of 65 cents per barrel at the refinery, a reduction of 7 cents per barrel.

THOMAS CHESTNUT IMPROVED

Thomas Chestnut, president of the Chestnut & Smith Corp., was reported showing improvement and his removal from St. John's Hospital, Tulsa, to his home was being considered.

CRUDE OIL PRICES

(Continued from Page 117)

Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) (Sept. 14, 1930)	1.45
Corning Grade Oil in Buckeye Pipe Line Co.'s Line (Mar. 11, 1931)	.80
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky)	1.10
Wayne District Oil in Cumberland Pipe Lines	1.17
Tide Water Pipe Co.	
Bradford district (Nov. 12, 1930)	$2.14
Allegany district (Nov. 12, 1930)	2.15
Pure Oil Co.	
Cabin Creek, W. Va. (Nov. 12, 1930)	$1.70
Kelly Creek, W. Va. (Nov. 12, 1930)	1.70
Bradford Hollow, W. Va. (Nov. 12, 1930)	1.70

MIDDLE WESTERN STATES

Ohio Oil Co.

(Effective Mar. 6, 1931)

Lima	$ .80
Wooster	.90
Illinois	.80
Indiana	.50
Princeton	.80
Plymouth	shut in
Western Kentucky	.75
Midland, Mich.* (Mar. 13, 1931)	.75
Dundee, Mich. (Oct. 26)†	
....Same as Mid-Continent gravity scale	
Upper and Lower Traverse sands, Mich. (Oct. 28, 1930)†	
.....Same as Mid-Continent gravity scale	
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (Oct. 28)‡	.85
Oil City, Ky. (Apr. 1, 1931)‡	.60
Oil Springs (Canada) (Oct. 28)†	1.57
Petrolia (Canada) (Oct. 28)†	1.50
Alberta (Canada)‡:	
50° and above (Mar. 1, 1931)	2.36
45 to 45.9° (Mar. 1, 1931)	1.87

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‡Posted by Paragon Development Co. ‖Posted by Stoll Refining Co. †Posted by Imperial Oil, Ltd. ‖Posted by Imperial Oil, Ltd., and Regal Oil & Refining Co. of Calgary.

MEXICAN CRUDE

Panuco*	$ .84

*F.o.b. ship, based on January transactions and exclusive of taxes and bar dues.

Of Interest to Sales Departments

ALCOHOL LAW BURDENS FRENCH OIL INDUSTRY

NEW YORK, Apr. 20.—American petroleum refiners and marketers, who are passing through trying times, can find at least one ray of sunshine by contrasting their position with that of the French oil trade.

French importers, refiners and marketers are subject to the same adverse competitive conditions which harass the American oil industry, but in addition have the national petrol-alcohol laws to contend with. The complexity of the alcohol law, in its actual workings, is summed up by the Paris correspondent of the London "Petroleum Times" as follows:

"1. The Government Alcohol Service purchases the industrial alcohol industry's surplus production at 320 francs a hectoliter, and passes it on to the petrol importers at 240 francs, that is, at a loss of 80 francs a hectoliter. This loss to the Alcohol Service is made good by means of a special tax of 5 francs on every hectoliter of petrol and benzol imported.

"2. Each hectoliter of 'carburant national' costs the blender 190 to 195 francs, and as the average selling price is 95 francs, the blender loses about 100 francs on every hectoliter. This loss, in turn, has to be spread over the sales of petrol, the price of which is increased by about 5 francs a hectoliter in consequence.

"3. It is the consumer of motor spirit, who, in the end, has to shoulder the whole burden of the manipulations. He has, as shown above, to pay both the 5 francs tax imposed in favor of the Alcohol Service and also the importers' loss on the sales of the 'national' fuel. The additional charge on petrol works out not far short of 10 francs a hectoliter; in other words, of every 8.50 francs the motorist pays for a 5-liter can of petrol, 50 centimes is a subsidy to the alcohol producers.

"The only people who benefit by the regulations are the distillers of alcohol and the few who manage to use the 'national' fuel, the latter obtaining the blend at a cost which works out about 30 francs a hectoliter cheaper than petrol. One disturbing factor is that the quantity unloaded on importers is liable to enormous fluctuations from year to year, according to the harvests. In 1923, the first year the regulations were applied, 174,000 hectoliters of alcohol were available; in 1930 the figure was 300,000, and in 1931 900,000 hectoliters are provided for. This means that, whereas last year 600,000 hectoliters of the national blend had to be disposed of, this year a market will have to be found for 1,800,000 hectoliters. If the trade did succeed in adapting itself to deal with this greatly increased quantity what would be its position if in following years the stock available dropped to a much smaller figure?"

REDUCE AUSTRIAN PRICES

The Austrian gasoline cartel has reduced retail prices on gasoline to 20 cents a gallon in Vienna, a decrease of 5 per cent, according to a report from Consul General Ernest L. Harris.

The reduction is 21 per cent for tank quantities and 15 per cent for barrel quantities. In the provinces the decline has been less, with the exception of Graz, where changes are similar to those in Vienna. The price has been steadily reduced during the past several months owing to competition with the cartel by outsiders, who sold 35 per cent of the gasoline taken in January.

SUGGESTS DROPPING TWO GRADES OF HEATING OIL

W. H. Butler, liquid fuel technologist, Standard Oil Co. of New Jersey, suggested to the American Oil Burner Association at its convention in Philadelphia last week that two of the six grades of oil now being sold by tank wagons be eliminated. He declared that burner salesmen are harming their business by spreading the impression that their product can operate on one grade of oil only, thereby diminishing the attractiveness of their burners in the customer's mind and antagonizing oil suppliers not selling that particular grade.

The four oils the speaker said he would retain were:

"The No. 1 oil which we believe will eventually eliminate itself due to the growing demand for cracking purposes.

"The No. 2 oil for residential and where convenience, comfort and cleanliness are far greater talking points than economy.

"The No. 4 oil for your 100 per cent automatic burner installation in small commercial buildings where the attendance of an operator is not practical.

"The No. 6 oil for large buildings in which it is sound practice to have an operator in and around the boiler room and where it is practical, from the wide variations of the physical characteristics to preheat the oil."

Mr. Butler added: "We all know it is not necessary for the success of the industry nor is it healthy for it to advertise this fact that it requires six grades of oil to cover their requirements when there are 26,000,000 automobiles in the United States which operate without a hitch on two grades of gasoline."

The speaker's objection to No. 3 oil was that "there was not enough physical, practical or psychological difference from No. 2 oil to justify the two classifications."

RECORD REFINERY SCHOOL

NEW YORK, Apr. 18.—The Tide Water Oil Co.'s refinery school at the Bayonne refinery is now in the last month of the school year and will terminate its sessions during the week beginning April 27.

The Process 11 class, which will graduate this month, is the largest in the history of the school, numbering almost 60 students. For the past few years the number of graduates has been steadily increasing, last year having the greatest number in the school's history. The number of men who will complete the two-year course this month, however, is double last year's class.

In addition to the students completing the process course, about 20 will complete the course in pipe fitting, the refinery mechanics course, and the same number will finish the one-year power plant engineering course, which teaches the principles and practices of steam boilers, steam engines, turbines and air compressors. In all, about 100 students will complete the work of the school.

MOTOR BOATS INCREASE

There were 248,448 motor boats registered in the United States on January 1, compared with 241,040 on January 1, 1930, and 130,826 at the beginning of 1920, according to the Bureau of Navigation, Department of Commerce.

The port of New York ranked first in the number of motor boats registered on January 1, with 33,971. Motor boats registered at the port of Tampa, Fla., numbered 21,204 and was followed in order by Baltimore, Md., 15,123; Philadelphia, Pa., 14,975; Norfolk, Va., 14,251; Portland, Me., 13,187; Boston Mass., 13,119; New Orleans, La., 12,862, and Detroit, Mich., 10,083.

VACUUM OIL WIDENS ITS AUSTRALIAN ACTIVITIES

NEW YORK, Apr. 21.—Vacuum Oil Co. has materially widened its activities in Australia through completion of new bulk terminals in Wellington, New Zealand; Hobart, Tasmania; Port Pirie, South Australia; and Portland, Victoria, and the installation of additions to its large terminal in Melbourne.

Operations of Vacuum in Australia are now in their thirty-sixth year, and the company's activities were substantially broadened in 1925 when bulk importation and distribution of refined products was inaugurated. Since that time the company has established 15 bulk terminals at principal ports and bulk depots at approximately 200 interior points.

The company has more than 150 rail tank cars in service in Australia, operates a fleet of approximately 400 tank wagons, and markets its products through more than 8,000 pumps, most of which are owned by the company.

Additional expansion of the company's Australian activities, now under way, include the expenditure of approximately $300,000 in construction of a new bulk terminal at Birkenhead, South Australia, where building operations are under way. The principal unit at the Birkenhead terminal will be a lub oil storage and compounding plant, 200'x200', with the entire building erected at platform height to facilitate loading operations. The new Birkenhead terminal also includes a warehouse for storage of cased and drum gasoline and kerosene, drum-filling plant, and garage and repair and paint shops.

MARKETERS SEEK CHANGE IN FRENCH ALCOHOL LAW

NEW YORK, Apr. 18.—Petroleum marketers in France are agitating for modification of the alcohol law of February 28, 1923, under which oil marketers are required to purchase arbitrary quantities of alcohol to be blended with the motor fuel which they distribute.

Office National des Combustibles Liquides has taken up the question of modification of the alcohol law through its special advisory committee.

While the "carburant national," as the national blend of alcohol and gasoline is known, theoretically costs 30 to 35 cents per hectoliter less than straight petrol (the national blend being 50 per cent petrol and 50 per cent alcohol), marketers in reality lose money on the blend, which is sold in the open market at 40 francs per hectoliter under the selling price of straight gasoline.

Up to the latter part of 1930, petroleum marketers were able to absorb their compulsory allottments of alcohol, which up to that time did not exceed 250,000 hectoliters per year, but at the close of 1930 French petroleum importers were called upon to absorb 600,000 hectoliters of alcohol, which amounts to substantially 3 per cent of all French petroleum imports.

TO SELL HONOLULU FUEL OIL STORAGE

NEW YORK, Apr. 20.—The United States Shipping Board has authorized the Merchant Fleet Corp. to sell the board's fuel oil station at Honolulu, and early announcement of the date for opening of bids will be made.

The Honolulu terminal is located on land leased from the Oahu Railway, and consists of two 55,000-bbl. steel storage tanks and two steam pumps. It was placed in operation in July, 1920.

Greatly decreased operations on the Pacific Coast by the shipping board, following the sale of its Pacific fleet, is given as the cause for the disposal of the Honolulu fueling station.

NAVY DEPARTMENT ASKS BUNKER FUEL OIL BIDS

WASHINGTON, D. C., Apr. 20.—Bids for bunker fuel oil, A and C grades, and fuel oil for Diesel engines, are invited by the Navy Department, to be opened May 1, for delivery on the East Coast, as follows: Boston, bunker fuel oil, A grade, 170,000 bbls.; C grade, 40,000 bbls. New London, Conn., A grade, 70,000 bbls. and 160,000 bbls. New York, A grade, 100,000 bbls. and 200,000 bbls.; C grade, 100,000, 200,000 and 60,000 bbls., different form of delivery. Philadelphia, A grade, 162,000 bbls.; C grade, 70,500 bbls. Indian Head, Md., A grade, 1,800 bbls. Norfolk and Hampton Roads, C grade, 10,000 bbls. Savannah, Ga., C grade, 40,000 bbls. Jacksonville, Fla., C grade, 65,000 bbls. New Orleans, C grade, 52,000 bbls. Beaumont, Tex., C grade, 18,000 bbls. Freeport, Tex., C grade, 10,000 bbls. Galveston, Tex., A grade, 25,000 bbls.; C grade, 70,000 bbls. Points on Houston Ship Channel, Texas. 10,000 bbls. Port Aransas, Tex., C grade, 50,000 bbls. Port Arthur, Tex., C grade, 40,000 bbls. Port Arthur, Beaumont or Baytown, Tex.; Baton Rouge, La., or other United States Gulf ports, A grade. 1,800,000 bbls.; C grade, 100,000 bbls.

Bids for fuel oil for Diesel engines are desired as follows: Portsmouth, N. H., 10,000 bbls.; Boston, 60,000 bbls.; New London, 16,000 bbls.; New York, 16,000 bbls.; Washington, D. C., 40,000 bbls.; Hampton Roads, Norfolk and vicinity, 40,000 bbls.; Charleston, S. C., 7,000 bbls.; points on Houston Ship Channel, 9,500 bbls.

Also bids for bunker oil, B grade, and fuel oil for Diesel engines are invited for delivery on the West Coast as follows: Longview, Wash., 5,000 bbls.; McNeil Island, Wash., 16,000 bbls.; Seattle, Wash., 60,000 bbls.; Astoria, 50,000 bbls.; Empire, Ore., 20,000 bbls.; Portland, 90,000 bbls. Eureka, Calif., 10,000 bbls.; San Diego, Calif., 70,000 bbls.; San Francisco, 1,000,000 bbls.; San Pedro, 3,600,000 bbls.; Hawthorne, Nev., 10,000 bbls.; Honolulu, T. H., 70,000 bbls.; Cavite-Manila, P. I., 50,000 bbls.

Fuel oil for Diesel engines is wanted in lots as follows: Puget Sound, 1,000 bbls.; Seattle, 2,000 bbls.; Tacoma, 250 bbls.; San Diego, 30,750 bbls.; San Francisco, 25,000 bbls.; San Pedro, 100,000 bbls.—C. E. K.

STANLOW DISCHARGING FACILITIES EXTENDED

The intention of the Ship Canal Co. to provide dock extensions at Stanlow was confirmed by the chairman, Alfred Watkin, at the recent annual meeting of the company in Manchester, England. The chairman said the question of extensions to cope with growing oil traffic at Stanlow had been the subject of careful consideration and the conclusion come to had been that the most practical way of providing the necessary additional facilities would be to construct a new dock equipped with two berths for large vessels.

U. S. PATENT OFFICE CANCELS CEROMAX

NEW YORK, Apr. 21.—On application by the Standard Oil Co. of Indiana, the United States Patent Office has cancelled the registration of the word "Ceromax" registered two years ago as a trademark for mineral waxes by Vacuum Oil Co.

The Indiana Standard protest was based on the contention that confusion had resulted with its brand "Syncera," used on an insulating wax manufactured from petroleum, and registered in 1925.

Industry Reaching Point to Build Upward

H. F. Sinclair in Annual Report Says No One Company Can Cure Conditions or Escape Consequences Common to All

Report of Sinclair Consolidated Oil Corp. and subsidiaries for year ended December 31, 1930, shows consolidated net profit of $12,026,424 after taxes, interest, depreciation, depletion, amortization, inventory adjustment and after deducting $7,607,695 reserve for decline in value of investments in other companies. This is equivalent after 8 per cent preferred dividends, to $1.77 a share on 6,152,404 no-par shares of common stock outstanding at end of year and compares with $16,599,037 or $2.81 a share on 5,460,008 common shares in 1929.

From the sale of its half interest in both Sinclair Crude Oil Purchasing Co. and Sinclair Pipe Line Co., the Sinclair Consolidated derived a profit in 1930 of approximately $28,312,000.

Current assets of Sinclair Consolidated at the end of last year exceeded current liabilities by $65,259,105, while at the end of 1929 the excess of current assets amounted to $47,569,322. Cash was $35,794,975 on December 31, 1930.

Besides the acquisition of properties of Pierce Petroleum Corp. during the year, the company made other expenditures for development of and additions to properties totaling $35,608,000. The major items were $12,168,000 for development and acquisition of oil and gas leases in the United States, $7,612,000 for improvements to refineries, $7,532,000 for additional marketing facilities in United States and foreign countries, $2,374,000 for pipe line construction, $993,000 for additional casinghead gasoline plants and $1,553,000 for construction of tank ships.

"Pipe line construction, while not extensive in itself," the company says, "will not only supply Sand Springs and Coffeyville refineries, but effect connections with main trunk pipe lines to Kansas City and Chicago, thereby securing the benefits of favorable joint tariffs."

"General conditions in the petroleum industry in the past year," H. F. Sinclair, chairman, states, "have not shown any improvement. However, it seems probable that we are reaching a point from which the industry can build upward. The average retail price of gasoline, which is, of course, the principal petroleum product, declined in 1930 1⅞ cents a gallon below the average price at principal points of consumption in the year 1929, and approximately 4 cents below the average price in the preceding five years. Lubricants, in the manufacture of which the company is now one of the leaders, have also declined in price. These facts are largely responsible for unsatisfactory earnings."

Stating that proration of oil production has worked injustice and failed to stabilize prices, Mr. Sinclair adds that the continuation of drilling has increased the capacity to produce, already in excess of market requirements, and at the same time the industry had to absorb increased imports. "Until these problems are faced and these conditions overcome by the industry as a whole," he says, "there seems to be no prospect of improved earnings. No one company can cure these conditions nor can any one company escape from consequences that are common to all."

Cities Service

Reports of Cities Service Co. for year ended December 31, 1930, excluding subsidiaries, shows surplus available for common stock and reserves of $41,614,217 after providing for taxes, interest and preferred dividends, against $29,591,440 in 1929. Capital stock consists of 1,125,931 no-par shares of $6 cumulative preferred stock, 296,000 no-par shares of 60-cent cumulative preference B stock, 63,119 no-par shares, $6 cumulative preference BB stock, 1,000,000 shares (par $1) 5 per cent noncumulative stock and 31,372,651 no-par shares of common stock.

Consolidated report of Cities Service Co. and subsidiaries for year ended December 31, 1930, shows profit of $60,622,740 after expenses, taxes and interest, but before reserves, comparing with $48,423,519 in 1929. Surplus after preferred dividends, available for reserves and common dividends amounted to $46,423,683 against $34,229,570.

The total number of security holders of Cities Service Co. and its subsidiaries rose from 750,000 to approximately 1,000,000 in 1930. The number of holders of Cities Service common stock now total 460,000 as compared with 359,000 a year ago, and 3,600 ten years ago. Excluding duplicate holdings of the company's securities, stockholders now exceed 590,000. Average number of common shares per stockholder is 69.

Bond and note financing during the year consisted of $118,115,600 principal amount of Cities Service Co. 5 per cent convertible gold debentures due 1950, and $35,000,000 principal amount of Toledo Light & Power Co. 5 per cent secured gold notes due 1932.

American Natural Gas

American Natural Gas Corp., had net income of $606,478 in 1930, equivalent to 19 cents a common share, against $845,939, or 74 cents, in 1929. The company said it did not expect to be ready to pay dividends on its securities until Oklahoma Natural Gas Corp., its principal subsidiary, had resumed dividend payments. Oklahoma has temporarily discontinued disbursements on its preferred stock because of "recent unforeseen developments." American Natural Gas has been paying $1.75 quarterly on its own $7 preferred issue.

Columbian Carbon

Columbian Carbon Co. omitted the extra dividend of 25 cents but declared the regular quarterly dividend of $1.25, payable May 1 to stock of record April 17.

At the annual meeting of Columbian Carbon Co., Dr. George A. Smith was elected an additional director, and retiring directors were re-elected. Doctor Smith formerly was president of Frederick H. Levey Co., Inc., manufacturer of printing inks, which was acquired by Columbian Carbon late last year.

Union Oil

Preliminary statement of Union Oil Co. of California for quarter ended March 31, 1931, estimates net income at $1,800,000 after interest, federal taxes, depreciation, depletion, intangible drilling expense, etc., equivalent to 41 cents a share (par $25) on 4,386,070 shares of stock. This compares with $2,600,000 or 61 cents a share on 4,264,067 shares in first quarter of 1930. The company declared the regular quarterly dividend of 50 cents, payable May 9 to stock of record April 17.

Lone Star Gas

Lone Star Gas Corp. reports for year ended December 31, 1930, net profit of $6,428,936 after depreciation, depletion, taxes, subsidiary preferred dividends, etc., equivalent, after dividends paid on $6.50 preferred stock, to $1.30 on 4,557,131 no-par shares of common stock. In 1929, the company reported net profit of $6,540,581, equal to $1.82 a share, on 3,595,841 common shares then outstanding.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Wednesday, was as follows:

Aug. 27	42.83	Dec. 24	25.68
Sept. 3	42.71	Dec. 31	26.15
Sept. 10	42.54	Jan. 7	27.56
Sept. 17	42.43	Jan. 14	27.31
Sept. 24	40.62	Jan. 21	27.55
Oct. 1	37.78	Jan. 28	27.26
Oct. 8	35.85	Feb. 4	27.26
Oct. 15	35.21	Feb. 11	28.76
Oct. 22	31.88	Feb. 18	28.53
Oct. 29	32.80	Feb. 25	29.33
Nov. 5	31.77	Mar. 4	27.67
Nov. 12	30.13	Mar. 11	26.53
Nov. 19	31.54	Mar. 18	26.78
Nov. 26	30.86	Mar. 25	26.35
Dec. 3	30.53	Apr. 1	24.80
Dec. 10	28.57	Apr. 8	25.52
Dec. 17	25.42	Apr. 11	24.72

CRACKING INSTALLATION COMPLETES RECORD RUN

NEW YORK, Apr. 20.—The Campina, Rumania, refinery of Steaua-Romana recently completed a record on-stream run of 57 days on its Dubbs cracking installation, with units Nos. 1 and 2, consisting of two 72½-inch tube convection furnaces, discharging into one 10'x40' reaction chamber, being on-stream together throughout the run with an on-stream time efficiency of 93.6 per cent.

The operating was flashing, giving a total charging stock throughput of 163,500 bbls. for the run, or at the rate of 2,870 bbls. a day. The run was on 0.898 gravity Rumanian charging stock, a blend of 80 per cent pacura and 20 per cent filtrate.

In connection with the Dubbs units the Campina refinery used secondary fractionating towers and the Gray system of vapor phase treating, these yielding, aside from the 40.2 per cent by volume of fuel oil residue 39.5 per cent of 200° C. endpoint gasoline, 14.3 per cent of gas oil and 6 per cent coke, gas and loss.

MAY COMPLETE LINE IN JULY

Rapid progress being made on the Western Gas Co.'s line to Douglas and Bisbee, Ariz., and Cananea, Mexico, indicates that completion may come in June or July. Bechtel & Kayser of San Francisco are in charge of line construction, Stone & Webster of compressor stations, with Ford, Bacon & Davis holding the general contract.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending April 11)

1931 High	1931 Low	Week ending Apr. 11 Sales	Week ending Apr. 11 High	Week ending Apr. 11 Low	Close Apr. 15	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1	⅛	100	¾	¾	..	Atlantic Lobos		490,448	N.P.	....	5-28-30	..	..	..	..	1	¼
12⅞	8	50	8	8	..	Borne Scrymser		$1,000,000	$25	....	10-15-30	56½	44½	46½	25	25	11¼
51	40	No sales.	..	..	..	Buckeye Pipe Line		$10,000,000	$50	$1Q	3-14-31	76	53	74½	55	69	39⅞
125	110	No sales.	..	..	..	Chesebrough Mfg.		$3,000,000	$25	$1Q‡	3-31-31	161	117	210	130	184⅞	104¼
3½	2½	3,000	2⅞	2½	2⅝	Creole Petroleum	(sh)	5,977,873	N.P.	....	.....	17½	9½	11¾	5⅝	7⅝	3
30	20⅝	No sales.	..	..	..	Cumberland Pipe Line		$1,500,000	$50	50cQ	3-16-31	114	67	75¾	40	65¾	20¼
29¾	27	200	28	28	29	Eureka Pipe Line		$5,000,000	$100	$1Q	2- 2-31	88	64½	70½	42	54¾	26
2⅛	1⅞	No sales.	..	..	..	Galena Signal Oil		$16,000,000	$100	....	.....	13	4¼	6½	3	7	2½
72	54¾	1,200	55⅛	54¾	54½	Humble Oil & Refining		$74,103,300	$25	50cQ	4- 1-31	114¾	59½	128	74⅛	119	57¼
18¼	14⅝	2,200	15⅛	14⅞	14⅝	Imperial Oil of Canada	(sh)	25,421,768	N.P.	12½cQ	3- 2-31	104	56¾	41	22	30	15
21⅛	16	700	16⅛	16⅛	..	Indiana Pipe Line		$3,000,000	$10	50cQ	2-14-31	91⅞	74⅜	41⅞	26	41	14½
15½	11⅝	8,300	12½	11⅞	12⅛	International Petroleum	(sh)	14,247,088	N.P.	25cQ	3-16-31	55	35	30⅜	15	24	11⅜
17½	12¼	800	15	14⅜	15	National Transit		$6,362,500	$12.50	25cQ	3-16-31	32⅜	19⅜	25⅛	10⅛	22⅜	11½
14½	10¼	300	10⅞	10⅞	11	New York Transit		$1,000,000	$10	25cQ	4-15-31	75	38½	17½	10	21⅜	10¼
30	28	100	30	30	..	Northern Pipe Line		$2,000,000	$50	$2SA	1- 2-31	69	56½	63	41	54	26¼
15½	13⅛	100	13⅝	13½	..	Penn Mex Fuel		$10,000,000	$25	....	12-15-30	84	28	44½	20	32	12
8	6	No sales.	..	..	7	Solar Refining		$4,000,000	$25	....	12-20-29	..	..	50	29	33	4⅞
15	10	No sales.	..	..	15	Southern Pipe Line		$1,000,000	$10	50c	3- 2-31	19	15	22½	13	20⅞	8⅜
23⅞	17¾	900	18	17⅞	17⅞	South Penn Oil		$30,000,000	$25	25cQ	3-31-31	71⅞	36¾	60¼	35⅛	45⅞	16¼
36	33	No sales.	..	..	..	Southwest Pennsylvania Pipe Line		$1,750,000	$50	$1Q	3-16-31	102	70	70	60	64	32
38½	30⅛	22,100	31¾	30⅝	30⅛	Standard Oil of Indiana		$348,175,069	$25	50cQ	3-16-31	95⅞	70⅞	63	45	59⅞	30
23⅝	19⅞	3,300	21¼	20⅜	20¼	Standard Oil of Kentucky		$25,654,516	$10	40cQ	3-31-31	179¾	122¼	46⅞	29	40½	18⅝
36½	28⅞	100	28⅞	28⅞	..	Standard Oil of Nebraska		$4,649,225	$25	50cQ	3-20-31	54⅞	39⅞	50¼	40	48⅞	34⅝
62½	49	550	57	49	..	Standard Oil of Ohio		$14,000,000	$25	62½cQ	4- 1-31	134	71	129	60	108½	43¼
3½	3½	No sales.	..	..	..	Swan-Finch Co.		$861,466	$25	....	1-15-29	23½	16	18	10	10	4
69¾	52⅝	6,300	55⅛	53⅜	54⅝	Vacuum Oil Co.		$126,180,350	$25	$1Q	3-20-31	111	72	133¾	75	97⅞	45⅜

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra.

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending April 11)

1931 High	1931 Low	Week ending Apr. 11 Sales	Week ending Apr. 11 High	Week ending Apr. 11 Low	Close Apr. 15	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
1¾	⅝	4,400	1⅜	1⅛	1	American Maracaibo	(sh)	700,000	N.P.	....	.....	9½	3⅛	8⅝	1⅛	4½	½
16⅞	10	No sales.	..	..	10	British American Oil Corp. (new) coup.		1,311,321	N.P.	20cQ	4- 1-31	55	32¾	62	7⅞	23	13⅜
2⅜	½	3,900	1¾	1⅜	1¼	Carib Syndicate		$131,250	25c	....	.....	4½	3⅞	4⅞	1	2¾	⅝
20¾	15	No sales	..	..	17⅜	Cities Service	(sh)	24,290,359	N.P.	30cA‡	3- 2-31	90⅞	54	68⅛	20	44¼	13
84¾	79¾	1,800	83¾	83⅜	..	Cities Service pfd.	(sh)	1,500,000	N.P.	50cM	3- 2-31	103¼	94½	98¾	84	93⅞	78¼
½	¼	12,400	⅛	¼	¼	Colombia Syndicate		$2,000,000	$1	....	.....	3¼	.76	2	½	¾	⅛
2¾	1¾	1,100	1¾	1¾	..	Consolidated Royal		$5,000,000	$10	7½cQ	1-25-31	8⅞	6¼	11⅛	2½	5⅞	2
⅝	⅜	2,600	½	⅜	..	Crown Central		.....	....	....	.....	..	..	..	..	..	..
5	3½	100	3½	3½	..	Darby Petroleum		1,019,392	N.P.	....	10-15-30	33½	3¼	26	6½	21⅝	4¼
6	2⅝	No sales.	..	..	..	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	2¼	1	11	2	11	2
40¼	30	No sales.	..	..	..	Derby Oil & Refining pfd.		48,500	N.P.	....	.....	21⅛	7½	44	20⅜	60	30
75½	60⅝	2,700	64⅛	60¾	60⅝	Gulf Oil Corp.	(sh)	4,504,921	$25	37½cQ	4- 1-31	165	101⅛	209	115	166⅞	58½
⅝	⅜	15,800	⅝	½	⅜	Intercontinental Petroleum		$5,682,000	$5	....	.....	3⅜	1	2⅞	⅝	1¾	⅝
1⅞	⅝	2,400	1½	⅞	..	Kirby Petroleum	(sh)	750,000	N.P.	....	.....	3	1¼	3⅝	1¼	3	⅞
1½	⅝	900	1	¾	⅞	Leonard Oil & Development		$50,000,000	$25	....	.....	9⅜	5⅛	6⅛	1	4¾	½
6¾	5⅝	200	5⅝	5⅝	..	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	43⅛	20	38⅞	18	29	4⅞
25	19	5,100	20⅛	19¼	19	Lone Star Gas	(sh)	5,000,000	N.P.	22cQ	3-31-31	69⅛	48½	67⅞	28	55⅞	19⅝
½	⅛	19,600	½	⅛	½	Magdalena Syndicate	(sh)	850,000	$1	....	.....	1⅞	½	1¼	¼	½	⅛
5	3	700	5	3½	..	Margay Oil Corp.		160,000	N.P.	....	7-10-30	48½	32	38½	14	16	3
4⅜	1½	400	3⅝	3⅜	..	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	8	2¾	6⅜	2¼	7½	1¾
½	¼	200	⅜	⅜	..	Mountain & Gulf		$4,000,000	$1	1cQ	4-15-31	1¾	.76	1½	¼	¾	⅜
5⅞	4¼	2,300	4⅜	4¼	4¼	Mountain Producers		$1,682,182	$10	25cQ	4- 1-31	28⅞	19½	22⅞	7	12⅛	3¾
1½	1⅛	300	1⅜	1¼	1¼	New Bradford Oil		$1,095,291	$5	7cQ	4-15-31	5⅝	4¼	5	2½	3½	1⅜
3	1⅞	2,100	2⅝	2	..	New Mexico and Arizona		$1,000,000	$1	....	.....	11⅞	7⅛	9⅜	2¼	7¼	1⅓
3¼	1¾	No sales.	..	..	..	North Central Texas	(sh)	400,000	N.P.	....	9- 2-30	14¼	8½	18½	6⅛	11¼	2⅛
½	¼	6,000	½	⅛	⅜	Pandem	(sh)	489,875	N.P.	....	.....	6	2⅛	3½	½	2½	¼
2	1⅛	100	1¼	1¼	..	Pantapec Oil	(sh)	1,506,000	N.P.	....	.....	15⅝	8½	10½	1⅞	4⅜	⅞
2½	1¾	No sales.	..	..	..	Red Bank Oil	(sh)	250,000	N.P.	....	.....	18	4⅞	16	9⅝	10⅛	1½
1½	1	1,900	1½	1	..	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	12⅞	4⅛	8½	1⅛	5⅜	1
3	2	No sales.	..	..	..	Ryan Consolidated	(sh)	500,000	N.P.	....	.....	12	4⅛	11	3	8⅝	2
1⅜	1	No sales.	..	..	..	Salt Creek Consolidated	(sh)	1,286,300	$10	7cQ	4- 1-31	7¼	5½	5⅞	1⅞	2½	½
7⅝	6⅛	900	6¾	6⅝	..	Salt Creek Producers	(sh)	1,496,859	$10	50c	2- 2-31	35	23⅛	25⅞	9	15¼	5¼
5¼	2⅜	3,700	4	3⅝	3¼	Sunray Oil Corp.	(sh)	1,163,185	$5	5%Q§	4-15-31	..	..	12	5⅝	10	2
1⅞	⅞	200	1	⅞	..	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	9⅛	4¾	6½	1¾	4½	⅝
3½	1½	100	3	3	..	Woodley Petroleum		$500,000	$1	....	3-31-29	8¼	4⅞	9½	2	5	½
⅞	⅜	300	⅝	½	⅜	Y Oil & Gas		100,000	N.P.	....	.....	8⅜	2⅛	2⅞	½	2½	⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Payable monthly and monthly stock dividend of one-half per cent. §Paid in lieu of regular cash dividend of 2 per cent.

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ending April 11)

1931 High	1931 Low	Week ending Apr. 11 Sales	Week ending Apr. 11 High	Week ending Apr. 11 Low	Close Apr. 15	Stocks		Outstanding capital	Par value	Div. rate	Last paid	1928 High	1928 Low	1929 High	1929 Low	1930 High	1930 Low
23	17½	3,800	19½	18½	18¼	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-30-31	43⅞	27⅛	42⅝	17½	31½	16½
12¾	7	2,000	8¼	7	..	American Republics Corp.	(sh)	209,180	N.P.	....	.....	85	51⅜	64¾	12½	37	5⅛
31	26½	No sales.	..	..	30	Associated Oil		$57,260,300	$25	50cQ	3-31-31	53⅜	37½	47¼	34½	51	30
23⅝	17¼	12,100	19¼	17⅞	18⅛	Atlantic Refining		$66,763,775	$25	25cQ	3-16-31	66⅜	50	77⅞	30	51⅜	16⅝
14½	10¼	21,100	11⅜	10½	10⅜	Barnsdall Corp. A		$56,546,600	$25	....	11- 6-30	54	20	49⅛	20	34	8⅝
12	8¾	18,000	9⅜	8⅞	8¾	Continental Oil of Delaware	(sh)	4,741,554	N.P.	....	.....	..	..	47⅛	18	30½	7¾
47	24¼	10,100	29⅞	27	28½	General Asphalt	(sh)	413,333	N.P.	75cQ	3-16-31	94⅞	68	94¾	42¼	71½	22⅜
68½	35¼	19,800	55⅞	49	52	Houston Oil		$24,968,600	$100	....	.....	167	79	109	26	116⅞	29¼
14⅛	8¼	17,900	12⅝	11	11½	Houston Oil (new)	(sh)	998,744	$25	....	.....	..	..	..	..	11¾	6⅝
4⅝	3¼	600	3⅝	3¼	3⅜	Indian Refining		$12,564,070	$10	....	.....	39⅝	9	53	13⅛	17	2
4½	3⅜	1,900	4¼	4	3⅞	Louisiana Oil Refining	(sh)	1,190,063	N.P.	....	.....	19¾	9⅜	18	7	12	3½
3¾	1⅞	700	2⅛	1⅞	..	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	25½	12½	18½	5⅛	10⅜	1⅝
20¾	10⅝	172,700	20¾	16⅜	18¼	Mexican Seaboard	(sh)	1,244,383	N.P.	....	10- 1-24	72	4⅝	59⅜	8¼	37	9¾
16¾	10½	9,000	11⅞	10½	10¾	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	2-16-31	44½	25⅛	39⅞	22⅛	32	11
19½	12	26,500	13⅜	12	12¾	Ohio Oil	(sh)	6,648,052	N.P.	25cQ	3-14-31	84	58½	79⅞	64¼	32	16
35⅛	32	No sales.	..	..	..	Pan American P. & T.		$50,084,700	$50	....	12-20-27	50⅞	38¼	69	40½	46½	42
36½	32	200	32	32	..	Pan American P. & T. "B"		$121,110,650	$50	....	12-20-27	59⅞	37¾	69¼	40½	67¼	30
4¼	2⅜	1,700	3	2½	2¾	Panhandle P. & R.	(sh)	199,370	N.P.	....	.....	21¾	11½	15¼	3	12¾	1⅜
18	10	20	18	17	15½	Panhandle P. & R. pfd.		$2,564,400	$100	....	.....	108	70	76	47½	80	47½
16⅝	9	30,000	10⅝	9⅞	9½	Phillips Petroleum	(sh)	2,593,075	N.P.	....	1- 2-31	53⅞	35¼	47	24¼	44⅜	11½
1½	⅝	1,500	⅞	⅞	..	Pierce Oil Corp.		$29,622,831	$25	....	.....	5¼	½	3⅜	1	2½	½
3⅜	1¾	1,300	2½	2⅛	2¼	Pierce Petroleum	(sh)	2,500,000	N.P.	10c	2-16-31	7	3½	5⅞	½	7⅛	1⅜
20⅜	12½	2,900	13⅞	13	13	Prairie Oil & Gas		$60,848,000	$25	50cQ	3-31-31	68	46	65⅜	40½	54	11¼
26½	17⅞	10,400	22⅞	20	22¾	Prairie Pipe Line		$101,250,000	$25	50cQ	12-31-30	280	172	65	45	60	16⅝
6	2½	300	4	4	4	Producers & Refiners		$37,438,950	$50	....	9-15-23	29⅞	16	25⅞	4	11⅞	1
16	11⅞	20	13½	13½	..	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	49⅝	41	46¾	25½	40	11½
11⅞	8⅛	12,600	8⅞	8⅛	8	Pure Oil		$75,959,250	$25	....	9- 1-30	31⅝	19	30¾	20	27¼	7⅝
6⅜	2¾	4,700	3	2¾	2⅝	Richfield Oil (new)		$52,410,875	N.P.	....	.....	56	23	49⅝	20	9¾	4⅛
10¼	5⅜	5,300	7¾	7	7	Rio Grande Oil	(sh)	1,236,270	N.P.	....	7-25-30	37½	32	42½	15	25¾	5
42⅝	34½	4,100	37	35⅞	34½	Royal Dutch, N. Y.	(sh)	611,303	....	$1.3404	1-30-31	64	44⅝	64	43⅛	56½	36⅞
34	28¼	No sales.	..	..	28¼	Shell Transport & Trading Co.		£23,985,000	£1	$0.966	1-23-21	47⅞	41⅜	51½	40⅝	48⅝	26
10¼	6½	7,000	7½	6⅝	6¾	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	39¼	23¼	31¾	19	25½	5¼
11	6⅝	900	7½	6⅝	7	Simms Petroleum		$8,353,620	$10	....	9-15-30	27¼	18⅛	40⅛	15	37	5⅝
15⅞	10⅛	40,100	12½	11¼	11⅝	Sinclair Consolidated	(sh)	5,500,000	N.P.	25cQ	4-15-31	46¾	17⅜	45	21	32	9¾
103	95	No sales.	..	..	..	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	2-14-31	110	102½	111	103	112¼	86
12⅞	7⅜	1,100	8⅞	8¼	7½	Skelly Oil		$27,441,250	$25	....	12-15-30	42⅝	25	40½	28	42	10⅛
51⅜	42¼	17,300	44⅜	42⅝	42¾	Standard of California	(sh)	12,594,098	N.P.	62½cQ	3-16-31	80	63	81⅞	51½	75	42¼
19	14¾	800	15⅜	14⅞	14¾	Standard of Kansas		$8,000,000	$25	25cQ	3-16-31	37¾	15	33¾	18	49	14⅜
52½	41⅛	61,050	44½	41½	42⅜	Standard Oil of New Jersey		$634,999,200	$25	25cQ‡	3-16-31	59⅜	37¾	83	49	84⅞	32½
26	21	21,800	22⅛	21	21	Standard Oil of New York		$445,223,675	$25	40cQ	3-16-31	33¼	28¾	48⅛	31¾	40⅜	19⅝
45¼	39½	700	41	39⅝	41½	Sun Oil	(sh)	1,416,869	N.P.	25cQ	3-16-31	77	31½	68⅜	55	70	39
1¾	¾	800	1¼	1	..	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-30	..	..	24	5¼	9⅜	⅜
36¼	27½	28,000	29⅛	27⅝	27½	The Texas Corporation		$246,204,900	$25	75cQ	4- 1-30	74⅞	50	71⅞	50	60½	28¼
6½	4½	2,400	4⅝	4½	..	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	26⅝	12⅛	23⅞	9½	14½	4
18	10½	100	17⅞	17⅞	..	Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	3-31-31	41½	19⅝	40	14	31	13
83	68¼	600	68¼	68¼	..	Tide Water Oil pfd.	(sh)	19,947,000	N.P.	$1.25Q	2-16-31	100⅛	86	97½	85⅛	94⅞	71
9	6½	8,300	7	6½	6½	Tide Water Associated	(sh)	5,560,424	N.P.	30cSA	2-16-31	25	14¾	23½	10	17¾	5⅞
68	55	1,000	58¾	58⅛	58	Tide Water Associated pfd.		$73,284,500	....	$1.50Q	4- 1-31	..	..	90⅞	74⅛	89¾	55
26⅝	20⅝	5,100	21¾	21	21	Union Oil of California		$104,342,375	$25	50cQ	2-10-31	58	42⅜	57	42½	50	20⅛
25½	20	1,300	22½	21⅜	21¼	Union Tank Car.	(sh)	1,254,048	$100	40cQ	3- 2-31	128⅛	110	163¾	121⅞	38½	23
7⅜	4¼	400	5	4½	4⅝	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	44⅞	26	42⅞	15	27	4¾
9⅜	6¼	5,100	9	7⅛	8¾	Wilcox Oil & Gas	(sh)	428,907	N.P.	....	5-10-28	..	..	29¾	12⅞	21	6⅛

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus extra dividend of 25 cents.

In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been splits in the stock.

EAST CENTRAL TEXAS

(Continued from Page 49)

may come in soon if the well is allowed to produce on open flow. At present it is shut in to 10 bbls. per hour until the Gulf Pipe Line Co. can build a line to it, as an 8-inch trunk line of the company runs within a short distance of the well, and only a short lateral is needed to tie into that line.

Babcock Brothers completed a dry hole in the eastern part of the Joiner Pool this week on their 4-acre lease in the Juan Ximenes Survey, a west offset to the Elzy Drilling Co.'s No. 1 Camp which has been producing for some time. The Babcock "duster" is approximately one-half mile northwest of the Joiner discovery well. Total depth of the dry hole is 3,607 feet. This is the first dry hole drilled with producing offsets, and in the area which is considered productive.

East Central Texas

Average daily production week ending April 18:

Boggy Creek	2,530
Cedar Creek	30
Currie	290
Hill County	30
Mexia	3,354
Nigger Creek	140
Powell	4,427
Richland	115
Rusk and Gregg Counties	228,583
Van	40,122
Wortham	450
Total East Central Texas	280,101
Week ended April 11	242,808
Increase	37,293

COMPLETIONS IN EAST CENTRAL TEXAS

Cass County

Smitherman's No. 1 A. S. Bell, dry and abandoned 3,783 feet.

Cherokee County

Moore and Baker's No. 1 M. M. Tommie, top Pecan Gap 3,054 feet, base Pecan Gap 3,418 feet, dry and abandoned, total depth 4,003 feet.

Delta County

Everett Drilling Co.'s No. 1 Sansiry, dry and abandoned, total depth 3,335 feet.

Ellis County

Foster and Richardson's No. 1 Surf, abandoned, total depth 2,164 feet.

Gregg County

Alco Royalty Co.'s No. 1 J. R. Castleberry, dry and abandoned, total depth 3,519 feet. Arkansas Fuel Oil Co.'s No. 1 P. D. Harrison, sand 3,540-60 feet, initial production 410 bbls. in 30 minutes, total depth 3,560 feet.

Barkley and Lincoln's No. 1 E. B. Prothro, abandoned location.

H. L. Blackstock's No. 3 Brightwell, top sand 3,606 feet, initial production 1,000 bbls. first four hours on tubing choke, total depth 3,659 feet. British American Co.'s No. 1 E. Thompson, top sand 3,668 feet, initial production 2,112 bbls. first 17 hours pinched on tubing, total depth 3,731 feet.

Daniels and Patton's No. 1 L. C. Dudley, top Georgetown lime 3,516 feet, dry and abandoned, total depth 3,530 feet.

Hurlbut and Brown's No. 1 A. J. Page, top Georgetown lime, dry and abandoned, total depth 3,691 feet.

Magnolia Petroleum Co.'s No. 2 Bun Rodden, sand 3,586-3,603 feet, initial production 117 bbls. first 15 minutes on 1-inch tubing choke and 1¼-inch casing choke, total depth 3,603 feet.

Selby Oil & Gas Co.'s No. 1 P. J. Snavely, sand 3,528-34 feet and 3,572-94 feet, initial production 700 bbls. first hour, total depth 3,594 feet. Shell Petroleum Co.'s No. 1 J. D. Davis, sand 3,586-3,606 feet, initial production 200 bbls. first hour through 2½-inch tubing choke, total depth 3,631 feet. R. C. Showalter and others' No. 1 A. J. Rodden, abandoned location. Simms Oil Co.'s No. 1 G. B. Tenery, sand 3,562-80 feet, initial production 60 bbls. in five minutes wide open, total depth 3,580 feet. Sultan Oil Co.'s No. 1 J. F. Spangler, sand 3,533-64 feet, initial production 375 bbls. first 30 minutes wide open, total depth 3,564 feet.

Tidal Oil Co.'s No. 1 A. A. Castleberry, top Georgetown 3,612 feet, dry and abandoned, total depth 3,626 feet. Tidal Oil Co.'s No. 1 F. K. Lathrop, oil sand 3,609-22 feet, initial production 395 bbls. in three hours through 3½-inch tubing choke, total depth 3,656 feet.

Youngblood, trustee's No. 1 W. M. Lamb, top Georgetown lime 3,534 feet, dry and abandoned, total depth 3,619 feet.

W. G. Ray and others' No. 1 F. C. Hall, top Georgetown lime 3,493 feet, dry and abandoned, total depth 3,755 feet.

Hunt County

Mamie S. Hammon's No. 1 W. H. Adams, location abandoned. Mamie S. Hammond's No. 1 R. L. Gray, location abandoned.

Limestone County

Imperator Oil Co.'s No. 1 B. B. Barron, dry and abandoned, total depth 3,169 feet. Maley and Heeman's No. 1 O. W. Wilkes, location abandoned.

Marion County

Shasta Oil Co.'s No. 1 E. M. Johnson, dry and abandoned, total depth 2,829 feet.

Navarro County

Navarro Oil Operators' No. 1 Matthews, location abandoned.

Rusk County

G. S. Anderson's No. 2 Jobe, sand 3,640-55 feet, initial production 105 bbls. per hour, total depth 3,710 feet.

Babcock Brothers' No. 1 William Camp, top Pecan Gap 2,500 feet, base Pecan Gap 2,500 feet, dry and abandoned, total depth 3,607 feet.

Roy I. Carter's No. 1 Giles, top Pecan Gap 2,776 feet, base Pecan Gap 3,175 feet, oil sand 3,675-3,744 feet, initial production 60 bbls. per hour through tubing, total depth 3,744 feet. Roy I. Carter's No. 1 A. Thrash, top Pecan Gap 2,683 feet, base Pecan Gap 3,070 feet, initial production 125 bbls. per hour, total depth 3,721 feet, oil sand 3,661-79 feet. Consolidated Oil Co.'s No. 6 Jobe, top Pecan Gap 2,548 feet, base Pecan Gap 2,927 feet, oil sand 3,581-3,608 feet, initial production 1,070 bbls. first 14 hours through casing, total depth 3,640 feet. Cranfill & Reynold's No. 1 Calvin Young, top Pecan Gap 2,712 feet, base Pecan Gap 3,074 feet, sand 3,667-94-3,702 feet, initial production 135 bbls. per hour, total depth 3,731 feet. Cranfill & Reynold's No. 1-B Calvin Young, top Pecan Gap 2,685 feet, base Pecan Gap 3,060 feet, sand 3,659-73-92 feet, initial production 100 bbls. per hour, total depth 3,758 feet.

Consolidated Oil Co.'s No. 4 Camp, shale and sand 3,615-80 feet, initial production 55 bbls. swabbing in two hours, total depth 3,680 feet. Consolidated Oil Co.'s No. 3-A Camp, broken shale and sand 3,635-3,700 feet, initial production 1,090 bbls. in 24 hours, total depth 3,700 feet. Cordova Union Oil Co.'s No. 3 C. O. Christian, top sand 3,662-3,712 feet, initial production 165 bbls. first hour on 2½-inch tubing choke, total depth 3,716 feet.

Devonian's No. 1 R. A. Motley, top sand 3,664 feet, initial production 300 bbls. first 30 minutes on 3-inch tubing choke, total depth 3,681 feet.

East Texas Refining Co.'s No. 2 Giles, top Pecan Gap 2,715 feet, base Pecan Gap 3,075 feet, sand 3,673-89-3,711-13 feet, initial production 320 bbls. first three hours on three-quarter inch choke, total depth 3,715 feet.

Federated Oil Co.'s No. 2 Ben Laird, top sand 3,690 feet, initial production 57 bbls. first hour on one-quarter inch choke, total depth 3,780 feet.

Frank Foster and Little's No. 2 Mayfield-Alford, hard broken sand and shale 3,614-3,700 feet, initial production 30 bbls. per hour, total depth 3,700 feet.

Gilcrease Oil Co.'s No. 1 Bradford, top Pecan Gap 2,580 feet, base Pecan Gap 3,005 feet, sand 3,625-28-32-34 feet, initial production 128 bbls. per hour through casing, total depth 3,668 feet. Gilcrease and others' No. 2 Bradford, top Pecan Gap 2,665 feet, base Pecan Gap 3,018 feet, sand 3,642-55-75-82 feet, initial production 272 bbls. per hour through casing, total depth 3,682 feet. Gulf Production Co.'s No. 1 Brightwell, top sand 3,631 feet, initial production 135 bbls. first hour on three-quarter inch choke on tubing, total depth 3,710 feet. Gulf Production Co.'s No. 2 Rose Mary Griffin, top sand 3,592 feet, initial production 150 bbls. first hour through 2¾-inch tubing chokes, total depth 3,680 feet.

Gulf Production Co.'s No. 1 Birdsong, top sand 3,557 feet, initial production 536 bbls. first 30 minutes on 2½-inch tubing choke, total depth 3,660 feet. Gulf Production Co.'s No. 1 Rose Mary Griffin, top sand 3,616 feet, initial production 859 bbls. first 30 minutes open through tubing, total depth 3,706 feet.

Hicks' No. 1 Peterson, top sand 3,630 feet, initial production 3,000 bbls. first eight hours on 1½-inch tubing choke, total depth 3,720 feet. Houston Oil Co.'s No. 1 L. D. Crim, top sand 3,709 feet, initial production 1,491 bbls. first 15 hours on 1-inch tubing choke, total depth 3,765 feet.

Humble Oil & Refining Co.'s No. 6 L. C. Crim, top sand 3,648 feet, initial production 234 bbls. first three hours, on one-half inch choke on tubing, total depth 3,696 feet. Humble Oil & Refining Co.'s No. 2 Kangerga, top Pecan Gap 2,706 feet, base Pecan Gap 3,065 feet, sand 3,692-3,736 feet, initial production 40 bbls. per hour through one-quarter inch tubing choke, total depth 3,756 feet. H. L. Hunt's No. 1 Finney, top Pecan Gap 2,507 feet, base Pecan Gap 3,080 feet, initial production 480 bbls. first 12¾ hours through casing, total depth 3,683 feet. H. L. Hunt's No. 2 Young, top Pecan Gap 2,644 feet, base Pecan Gap 3,068 feet, sand 3,689-92 feet, 3,722-26 feet, initial production 475 bbls. per hour through tubing and casing, total depth 3,789 feet.

Humble Oil & Refining Co.'s No. 7 L. D. Crim, top sand 3,630-68 feet, initial production 79 bbls. first hour on eleven-sixteenths-inch choke, total depth 3,682 feet. Same company's No. 10 L. D. Crim cored oil sand 3,691-3,745 feet, initial production 140 bbls. on eleven-sixteenths-inch choke the first hour, total depth 3,777 feet. Same company's No. 11 L. D. Crim, top sand 3,701 feet, initial production 180 bbls. first hour on 1½-inch tubing choke, total depth 3,783 feet. Same company's No. 12 L. D. Crim, top sand 3,675-98 feet, initial production 100 bbls. first hour on eleven-sixteenths-inch tubing choke, total depth 3,755 feet. Same company's No. 2 B. F. Laird, top sand 3,568 feet, initial production 154 bbls. first hour on eleven-sixteenths-inch choke, total depth 3,664 feet. Same company's No. 1-A S. S. Laird, top sand 3,597 feet, initial production 144 bbls. first hour on eleven-sixteenths-inch choke, total depth 3,718 feet. Same company's No. 5 J. N. Peterson, top sand 3,698 feet, initial production 100 bbls. on eleven-sixteenths-inch choke for the first hour, total depth 3,780 feet.

H. L. Hunt's No. 1 Young, sand 3,673-90 feet, initial production 125 bbls. per hour through tubing, total depth 3,723 feet.

Jones Drilling Co.'s No. 1 Thrash, oil sand 3,672-90 feet, initial production 2,000 bbls. first 18 hours, total depth 3,755 feet.

E. M. Jones and others' No. 2-B J. M. Crim, top sand 3,675 feet, initial production 149 bbls. first hour on 1-inch casing choke, total depth 3,739 feet.

K. & M. Oil Co.'s No. 1 Taliaferro, oil sand 3,641-63 feet, initial production 2,000 bbls. in 24 hours, total depth 3,740 feet.

Leonard Petroleum Co.'s No. 1 Alford, oil sand 3,602-13 feet, initial production 1,144 bbls. first 18 hours, total depth 3,654 feet. Lewis Production Co.'s No. 1 D. M. Peterson, top sand 3,587-3,610 feet, initial production 177 bbls. first 15 minutes open through casing and tubing, total depth 3,610 feet.

Lide-Rowe Oil Co.'s No. 1 Calvin Young, top Pecan Gap 2,740 feet, base Pecan Gap 3,091 feet, sand 3,681-3,710 feet, initial production 130 bbls. per hour, total depth 3,710 feet. Lide-Tayloe Oil Co.'s No. 2 Calvin Young, top Pecan Gap 2,680 feet, base Pecan Gap 2,082 feet, sand 3,677-98 feet, initial production 125 bbls. per hour through tubing.

Magnolia Petroleum Co.'s No. 3 W. R. Crim, cored sand 3,640 feet, initial production 522 bbls. first hour open through casing and tubing, total depth 3,673 feet. Markham and Dunning's No. 2 J. N. Peterson, cored sand 3,628-85 feet, initial production 718 bbls. first hour on 2½-inch tubing choke and 4-inch casing choke, total depth 3,698 feet. Marine Oil Co.'s No. 1 Nat Bean, top sand 3,606-57 feet, initial production estimated 750 bbls. first 30 minutes open through tubing and casing, total depth 3,657 feet. Merrick's No. 2 Thrash, sand and shale 3,668-3,705 feet, initial production 1,637 bbls. first 16½ hours through tubing, total depth 3,729 feet. Moss and Urshell's No. 1 Mayfield-Alford, oil sand 3,583-3,605 feet, initial production 70 bbls. on pump, total depth 3,672 feet.

Magnolia Petroleum Co.'s No. 6 W. R. Crim, top sand 3,642 feet, initial production 168 bbls. first 15 minutes open through tubing, and casing, total depth 3,664 feet. Magnolia Petroleum Co.'s No. 7 W. R. Crim, top sand 3,610 feet, initial production 178 bbls. first 15 minutes open through casing and tubing, total depth 3,628 feet.

Olsen Brothers' No. 2 Brown, top Pecan Gap 2,700 feet, base Pecan Gap 3,092 feet, sand 3,625-3,741 feet, initial production 180 bbls. per hour through tubing, total depth 3,745 feet.

Olsen Brothers' No. 4 Brown, oil sand 3,685-88 feet, initial production 135 bbls. per hour through tubing, total depth 3,724 feet.

Perry and others' No. 1 Thrash, sand

RESULT OF POTENTIAL TEST IN LATHROP POOL OR LONGVIEW AREA, APRIL 17

Company, lease—	Well	Total acres	Bbls. oil per hr.	Potential for 24 hrs.	Opening pressure on tubing	Closing pressure on tubing	Size tubing
Arkansas Fuel Co.:							
Lathrop	1	96	95	2,280	270	275	2½"
	2		97⅓	2,340	250	250	2½"
	3		100	2,400	260	260	2½"
	B-1	71	98	2,064	250	255	2½"
	C-1	92⅓	104	2,496	300	300	2½"
Harrison	1	200	133	3,192	310	310	2½"
McKinley	1	246	107	2,568	315	315	2½"
Eslick, Brown-Little:							
Church lot	1	5	91	2,184	280	280	2½"
East Texas Ref. Co.:							
Fisher	1	143	42	1,008	NG	NG	2½"
	2		85½	2,052	NG	NG	2½"
Magnolia Pet. Co.:							
Rodden	1	43	92	2,208	295	210	2½"
	2		80	1,920	175	200	2½"
	3		94	2,256	200	200	2½"
	4		92	2,208	210	200	2½"
	5		89½	2,148	275	275	2½"
Navarro Oil Co.:							
Tenery	1	10	This well flowing 350 bbls. daily wide open				
Selby Oil & Gas Co.:							
Snavely	1	1,000	130	3,120	460	460	2½"
Sultan Oil Co.:							
Stuckey	1	160	100	2,400	400	Estl.	
Roeser & Pendleton:							
Rodden	1	32	87	2,088	255	255	2½"
	2		97¼	2,360	260	280	2½"
Simms Oil Co.:							
Tenery	1	10	93	2,232	220	280	2½"
	A-1	5	88	2,112	295	245	2½"
Skipper Hall Co.:							
Snoddy	1	7	110	2,640	NG	NG	2½"
Tidal Oil Co.:							
Lathrop	1	25	68	1,632	45	300	2½"
Yount Lee:							
Davis	1	80	100	2,400	300	300	2½"
McKinley	1	40	113	2,712	310	320	2½"
Skipper Lacy Co.:							
Magrill	1	10	750	3,192	500	500	
Pilot Oil Co.:							
McGrede	1	10	75	1,800	NG	Est.	
	28	2,293⅓		62,012			

Sultan Oil Co., Pilot Oil Co., and Skipper Oil Co., estimated.

3,601-05 feet, initial production 1,165 bbls. first six hours through casing, total depth 3,690 feet. Perry and others' No. 2 Thrash, oil sand 3,633-76 feet, initial production 2,300 bbls. first 11½ hours through casing, total depth 3,686 feet. Pioneer Oil Co.'s No. 2 Thrash, oil sand 3,661-3,700 feet, initial production 1,994 bbls. first 18 hours through tubing, total depth 3,702 feet.

Pilot Oil Co.'s No. 3 Finney, top Pecan Gap 2,636 feet, base Pecan Gap 3,024 feet, sand 3,610-36-85 feet, initial production 2,058 bbls. in 24 hours through tubing, total depth 3,694 feet. Pioneer's (Moody-Seagraves) No. 5 Thrash, top Pecan Gap 2,694 feet, base Pecan Gap 3,090 feet, sand 3,662-66 feet, 3,700-02 feet, initial production 2,400 bbls. in 24 hours, total depth 3,703 feet.

Roberts' No. 1 School Land, top Pecan Gap 2,666 feet, base Pecan Gap 3,076 feet, sand 3,665-88-95 feet, initial production 320 bbls. first hour and 20 minutes, total depth 3,708 feet.

Shasta Oil Co.'s No. 1 Ras Pool, oil sand 3,692-3,707 feet and 3,712-18 feet, initial production 155 bbls. first hour through tubing, total depth 3,779 feet. Shaw Oil Co.'s No. 3 Ashby, sand 3,653-92 feet, initial production 100 bbls. per hour by heads, total depth 3,695 feet. Sinclair Oil & Gas Co.'s No. 1 Daisy Bradford, sand 3,620-48 feet, sand and shale 3,660-3,700 feet, initial production 931 bbls. first 22 hours through tubing, total depth 3,710 feet. Sinclair Oil & Gas Co.'s No. 8 Holland, broken oil sand 3,620-35 feet, oil sand 3,635-50 feet, initial production 548 bbls. first 11 hours through tubing, total depth 3,683 feet. Snetcher and Pittman's No. 1 Cox, sand 3,657-75 feet, initial production 375 bbls. per hour for the first four hours, total depth 3,711 feet. Stanolind Oil & Gas Co.'s No. 1 Ben Laird, sand 3,624 feet, initial production 3,223 bbls. first 20 hours on three-fourths-inch choke on tubing, total depth 3,754 feet. Stanolind Oil & Gas Co.'s No. 2 Ben Laird, top sand 3,655 feet, initial production 425 bbls. in eight hours on eleven-sixteenths-inch choke, total depth 3,767 feet. Tidal Oil Co.'s No. 1 Finney, sand 3,651-61 feet and 3,687-3,705 feet, initial production 1,155 bbls. first 12 hours through tubing, total depth 3,729 feet. Tidal Oil Co.'s No. 2 Holland, sand 3,656-60 feet, initial production 1,134 bbls. first 14 hours through tubing, total depth 3,748 feet. Turman Oil Co.'s No. 3 Deason, sand 3,665-78 feet, initial production 1,-152 bbls. first 12 hours through tubing, total depth 3,709 feet. Turman Oil Co.'s No. 1 Young, sand 3,672-88 feet, initial production 125 bbls. per hour through tubing, total depth 3,700 feet.

Shaw Oil Co.'s No. 1 Deason, top Pecan Gap 2,716 feet, base Pecan Gap 3,170 feet, initial production 620 bbls. through casing in 24 hours, total depth 3,702 feet. Southern Oil Co.'s No. 1 Giles, top Pecan Gap 2,690 feet, base Pecan Gap 3,074 feet, oil sand 3,669-93 feet, initial production 65 bbls. first 25 minutes through tubing, total depth 3,700 feet.

E. R. Tennant's No. 2 Brooks, top Pecan Gap 2,640 feet, base Pecan Gap 3,066 feet, sand 3,670-96 feet, initial production 1,365 bbls. first 15 hours through tubing, total depth 3,696 feet.

Ward Oil Co.'s No. 1 Thrash, sand 3,753-99 feet, initial production 650 bbls. per day through one-thirty-second-inch choke, total depth 3,799 feet.

Ward Oil Co.'s No. 2 Giles, top Pecan Gap 2,730 feet, base Pecan Gap 3,060 feet, sand 3,688-3,714 feet, initial production estimated 125 bbls. through tubing, total depth 3,729 feet. Woodley Petroleum Co.'s No. 1 Loe Ladd, top sand 3,636 feet, initial production 410 bbls. first hour on 2½-inch tubing choke, and three-quarter inch casing choke, total depth 3,666 feet. Woodley Petroleum Co.'s No. 1 D. M. Peterson, top sand 3,658 feet, initial production 225 bbls. first 25 minutes through 2½-inch tubing, total depth 3,730 feet.

Upshur County

D'Armand and others' No. 1 J. C. Cobb, top Pecan Gap 2,590 feet, base of Pecan Gap 3,150 feet, sand 3,742-64 feet, water and smell of oil, dry and abandoned, total depth 3,764 feet.

Van Zandt County

Pure Oil Co.'s No. 3 J. A. Bracken, initial production 104 bbls. on eleven-sixteenths inch choke, total depth 2,947 feet. Same company's No. 1 V. T. Davis, derrick abandoned temporarily. Same company's No. 5 R. L. Wells, derrick abandoned temporarily. Same company's No. 4 W. F. Swain, derrick abandoned temporarily. The Texas Company's No. 3 R. V. White, location abandoned. Pure Oil Co.'s No. 2 W. F. Swain, completed as gas well, initial production estimated 909,000 feet of gas, total depth 2,924 feet. Same company's No. 2 A. G. Tunnell, completed as gas well, estimated 7,100,000 feet of gas (shut in), total depth 2,942 feet. Same company's No. 6 W. T. Jarman, completed as gas well, initial production estimated 7,125,000 feet of gas, total depth 2,956 feet. Same company's No. 2 A. F. Magers, completed as gas well, initial production estimated 2,109,000 feet of gas, total depth 2,927 feet.

IS COST ACCOUNTING OF ANY REAL VALUE?

(Continued from Page 56)

adapted to work consisting of many small repair jobs.

In addition, these cost figures will permit a comparison between the relative merits of the production foremen in the various districts. One foreman will attempt to gain economy by repairing equipment beyond all possible stages so that after a year or two he has no part of that with which he started. In doing this he spends much more on labor and time than another who has ideas of speed. The latter type repairs as little as possible. He pushes his men at the expense of greatly increased repairs or entire replacements rather than spend time keeping up the equipment.

When these cost analysis figures are available and the men know that their relative ability as foremen is judged not on some intangible item but upon the actual cost of the oil produced in their area relative to the cost a month or year ago, a great decrease in operating expenses is noticeable. Each will benefit by the results of the experience of the others. It also serves a two-fold purpose by creating a spirit of competition or rivalry between the various crews and foremen, which always tends to decrease costs and make for more efficient operation.

Detailed Figures Needed

In order to obtain the proper figures so that these results may be possible it is essential that blanket and prorated charges be eliminated wherever possible and replaced by detailed costs and direct overhead, head office overhead, and similar items, but costs under these classes should be only those that would exist anyway whether the project under consideration is taken up or not. In other words, they are charges that are merely prorated to each active project and if the projects were discontinued the charges would have to be borne anyway.

Obtaining accurate drilling costs is relatively simple for all items except drilling tools as all else can be charged to each well direct. Drilling tools and equipment used in several wells present a rather unique problem in allocation. A system formerly employed by the Union Oil Co. to handle drilling tool expense was to set up in one account the cost of the drilling tools and the repairs and maintenance thereon and to attempt to derive a sufficient revenue from each drilling project by charging a flat daily rental per crew day.

This was not satisfactory from an operating standpoint for several reasons: First, the revenue rarely approached the expense. After each drilling boom the obsolescence of the equipment purchased would take place so rapidly that the daily charge per crew day would not, on a smaller amount of drilling, be sufficient to equal it. In the second place, a well using new, modern equipment which drilled faster received the same charge for the use of that equipment as did an abandonment job or small repair jobs where the investment in equipment was less than 10 per cent of the cost of that at the active new well. A third disadvantage of this system was that it did not provide data for a comparison between drilling crews in the frequency of breakage and replacement of equipment.

New Method

The new method of handling drilling tool accounting charges each well with a daily rental for all tools used. This daily rental is proportional to the cost of the equipment, to its relative life, and to the amount of use or turnover that it will have before obsolescence. All repairs to drilling tools and equipment are charged direct to the well at which the breakage occurred. All tools damaged beyond repair, lost in the hole, or otherwise unaccounted for are charged at their value to the project. This system gives a rather accurate charge to each drilling well for the tools and equipment used therein.

The following is an example of the use to which this system has been put. It was determined from a number of wells that the average life of brake linings was less than one month for a set of brake linings for one well, at a cost of approximately $200 per month per well. At one well, the first month the system was established, the cost of brake linings was $780, nearly four times the average. Upon investigation it was found that the drilling crew at that well had a reputation for speed and their average time for dropping a stand of drill pipe was between 10 and 12 seconds. A fair average time for other crews was found to be between 18 and 20 seconds. The crew was easily convinced that there was no gain in dropping a stand in 10 seconds when it took four hours to change brake bands and cost approximately $600 per month more for new brake linings. The drilling foremen are also beginning to govern their operations by the new system, which has resulted in considerable competition in cutting costs.

Allocating Costs

Production costs are more difficult to allocate to each well and it is doubtful that the plan would be feasible. Costs are usually grouped by lease or operating units, but the information should be so set up that individual well costs can be worked up at least at annual periods. In numerous instances a lease that apparently is operating efficiently and having a return on its investment over and above the operating expenses will be found, after analyzing the individual well costs, to be carrying along one or more dead heads. If these wells were abandoned, repaired or shut down, there may be a slight reduction in the total production from that lease but it would be more than offset by the increased revenue, particularly under the present curtailment conditions where the actual volume of oil produced is a secondary item.

When analyzing these individual well costs on producing properties, in order to properly determine which wells in the group are earning the greatest revenue, the prorated costs must be investigated carefully. For example, shutting down one well in a group of five operated by one string of pumpers and one well pulling crew would not reduce proportionately the one-fifth of the three pumpers as that charge would be automatically spread over the other four wells. However, the well shut down may have been the one that made necessary the pulling crew, thus saving that expense. The same condition exists in other prorated charges such as water systems, waste water disposal systems, electric power distributing systems, gas gathering systems, and so forth. Before being certain that a stipulated amount of money can be saved if a well is shut down, these prorated charges must be investigated to determine if they will be put on some other well or eliminated entirely.

Cost Finding Inconsistencies

Several inconsistencies are apparent in cost finding systems for field operations, as for example, without a doubt every oil company operating equipment keeps a detailed and accurate cost of each truck and auto individually and knows the cost per mile, cost per mile life, and so forth on an investment of only approximately $1,500. On the other hand, it is doubtful if any cost accounting system can furnish an accurate investment figure for a producing well costing $100,000, $200,000 or $300,000. Well prorated charges and expenses present a much more complicated problem than those for single truck operation and often to obtain some types of detailed expenditures would cost more than the actual saving that could be effected if the figures were known. If the system is such that an investigation can be made annually, a much more reliable figure will be obtained covering annual averages or repairs and replacements of equipment having a life of several years and pulling and cleaning out jobs occurring at infrequent intervals.

Some of the prorated costs are handled more in a manner with which some of us have been familiar, as for example, at the end of each month the journal vouchers, warehouse requisitions and invoices were laid on the superintendent's desk and approved at his convenience and noted where and when the charges should be made in order that the operating leases might always show the same revenue and that all of the projects might appear to be going along equally favorably. It is apparent that such an accounting system is worse than useless.

In concluding it can be said with certainty that accurate cost accounting is of the utmost value in making operating decisions both from a standpoint of where to spend the money and how to spend the money in the most efficient way so that the maximum return may be received.

CRACKING UNIT BEGINS OPERATIONS IN SWEDEN

NEW YORK, Apr. 20.—Cracking operations have been inaugurated in Sweden with the starting of an 800-bbl. Dubbs unit in the Stockholm refinery of A. Johnson & Co., said to be the most northerly oil refinery in the world.

The new unit, designed for flashing operation at a maximum operating pressure of 200 pounds for the production of gasoline and fuel oil, consists of a Universal Oil Products 61-4 in outside diameter tube radiant heat furnace, with single electrically welded reaction chamber, 10 feet in diameter by 30 feet high, an electrically welded dephlegmator, 3 feet 6 inches in diameter by 28 feet high, surge type reflux pump, residuum flashing system, control house, and the necessary pumps and auxiliary equipment.

In the initial run of the new unit, Venezuelan charging stock mixed with topped Mid-Continent crude was run at the rate of 1,080 bbls. per 24 hours. The characteristics of the charging stock were described as 0.884 specific gravity, with an initial boiling point of 86° C. and 52 per cent distilling over at 300° C.

Notwithstanding the inexperience of the operators, the unit continued on stream for 504 hours and was forced to shut down only because of the lack of storage for the refined products. The initial run produced 64 per cent by volume of 0.763 gravity pressure distillate, and from this 69 per cent of 0.749 gravity 200° C. final boiling point gasoline, equivalent to 44 per cent by volume of the charging stock, yielded. The 1.05 gravity fuel oil represented 20 per cent of the charging stock and the remainder was gas, coke and loss.

Prior to the installation of the cracking plant, the Johnson refinery was engaged in the manufacture of road asphalt. M. Almquist, former superintendent of the Warner-Quinlan refinery, Warners, N. J., is manager of the Johnson refinery.

MANUFACTURED GAS LINE

San Diego Consolidated Gas & Electric Co., of San Diego, Calif., has completed its line from San Diego to Del Mar, Solano Beach, Cardiff, Encinitas, Leucadia, Carlsbad and Oceanside. Manufactured gas from the San Diego plant will be served in these towns. The line is 26 miles long and is the largest single gas main project yet undertaken by the company. An extension is also proposed to serve Otay and San Ysidro, Calif., about 5 miles south of Chula Vista.

COMMITTEE REPORTS ON OPERATIONS IN HOBBS

(Continued from Page 53)

both for shut-in conditions and for various rates of flow, appears desirable and may lead to a better method of determining potentials. It should be noted, however, that considerable effort along this line in the Yates Pool has not yet led to the acceptance of such a plan there. Nor is there any reason to think that under such a method the number of wells with erratic behaviors will be less than for the method reported on by R. E. Watson, Humble Oil & Refining Co.

"It is to be noted that decline in bottom hole pressure is to be brought about either by the escape of oil, escape of gas, or escape of both. With a constant gas-oil ratio for a particular well at various rates of flow, the method of extending a curve showing rates of production plotted against decline in formation pressure would seem to indicate potential open flow. On high ratio wells, or where gas ratio varies sharply at some higher rate of flow than those tested, grave difficulties are seen in applying this method. It seems likely that in the latter case relationships may be at least as complex as those entering into the tubing curve potential method, and might well call for an analysis of the graph on the basis of the two components of the fluid, namely, gas and oil. Too much reliance should not be placed on the possible use of this method."

Robert Christie of the American Petroleum Corp., Hobbs, N. M., gave a discussion and some results obtained in the use of the Amerada depth pressure recorder in the Hobbs Field. The following are some of the results obtained on closed-in Amerada wells:

Date of test—	Well No.	B.H.P. adjusted to top of Crystalline lime	B.H.P. adjusted to 400 ft. below sea level
Sept. 30, 1930	No. 4 McKinley	1,511 lbs.	1,519 lbs.
Jan. 22, 1931	No. 4 McKinley	1,472 lbs.	1,481 lbs.
Difference		39 lbs. loss	38 lbs. loss
Oct. 17, 1930	No. 1-A State	1,469 lbs.	1,493 lbs.
Feb. 17, 1931	No. 1-A State	1,427 lbs.	1,469 lbs.
Difference		32 lbs. loss	24 lbs. loss
Sept. 30, 1930	No. 2-A State	1,446 lbs.	1,477 lbs.
Jan. 12, 1931	No. 2-A State	1,449 lbs.	1,480 lbs.
Difference		3 lbs. gain	3 lbs. gain

Note—No. 2-A State is an extremely high gas-oil ratio well.

Production Control

While it was agreed by the engineers at the Midland meeting that bottom hole pressure measurement is new and many things will have to be developed before it can be applied to production problems in a definite way, still it is agreed that production control has been practiced in all fields for some time. As a general rule, production control has been done by regulating the pressures at casinghead, which is an indirect method because the rate of production must bear some definite relationship to the loss in pressure between formation and bottom of hole, so that in applying casinghead pressure an indirect method based upon pressure at bottom of hole is being used.

C. V. Millikan, engineer for the Amerada Petroleum Corp., stated in the Midland meeting that "the work at Yates has definitely demonstrated that there is a definite relationship between loss in pressure in formation and rate of production.

"Probably most engineers are familiar with some work which was done by the Bureau of Mines on loss in pressure in formation and rate of production to establish an open flow capacity for gas wells. That work was done under the supervision of E. R. Pierce and E. L. Rawlins and published in May, 1929, as Report of Investigation No. 2,929 and 2,930. The title is "Study on Fundamental Basis for Determining Open Flow Capacity for Gas Wells."

"In that work is the result of tests of several hundred wells, and over a period of years it was found there was a definite relationship between the drop in pressure and rate of production, so that the open flow capacity could be calculated quite accurately by applying those principles as described.

"If that relationship holds on gas wells, there should be no reason why same should not hold on oil wells. In fact, some work has been done by the Amerada Petroleum Corp. engineers that indicates a very similar relationship. If it holds in the Yates Pool, certainly it should hold at Hobbs."

OUTLINE OPERATION OF HIGH PRESSURE UNIT

(Continued from Page 114)

and reflux by a screen type mist extractor. The condensate flows down to the reflux dewatering tank located next to the evaporator. Here the water is separated from the oil and drained off. The reflux oil returns to the top of the evaporator by gravity, due to the height of the mist extractor. Gasoline vapor goes to the condensing sections in the cooling tower from which the condensed liquid and some vapor go to the gasoline dewatering tank.

The gasoline goes to an 18-plate stabilizer operating at 35 pounds, thence to final coolers and storage. It accomplishes this under its own pressure through back pressure held on the entire distillation system.

A 24-plate fractionating reabsorber is provided to treat all low-pressure vapors and gases which may contain valuable material. This unit, with automatically controlled heating element in its base, is divided into an absorbing section and a fractionating section. Its oil circulation is obtained from the low-pressure lean oil supply by throttling. Absorption is carefully controlled through varying the amount of oil circulated over the top. Among other things accomplished by this unit is the practical elimination of the recycling of propane. This piece of equipment treats overhead vapors from the stabilizer, uncondensed gasoline vapors from the gasoline condensers which have passed through to the dewatering tank, and vent gases from the low-pressure weathering tank.

The cooling tower is constructed of pine treated with creosote to give structural strength and withstand climatic conditions. It is 72 feet long, 22 feet wide and 42 feet high of standard Campbell design. It is of the narrow louver, deckless type, the interior being entirely open. Water distribution is through spray nozzles directed downward and so piped that direction of sprays is adjustable; the spray system being in the top of the structure. A separate spray header is provided lower down for winter use. During operation a strong downward draft is induced through the tower by this type of construction, clearing it of vapors and efectively combating the low wind velocities and high wet bulb temperatures of the region.

A rather unusual plan of separate cooling tower basins is used. A concrete dam is installed across the center of the tower. All hot materials are brought into one end of the tower for initial cooling. Here the extremely high temperatures are disposed of and the material then passes to the other end of the tower for finish cooling in an atmosphere free from steam and under conditions more favorable for close approach to the desirable wet bulb. A separate water piping system is used. There is a marked difference in the temperature of the water in the two basins. All cooling is done through the use of open cooling sections, installed in the base of the cooling tower.

Storage consists of four 25,000-gallon Underwriters' tanks for gasoline and one of equal size for absorption oil. These are in addition to the storage facilities at the loading plant. No provision is made for the treatment of storage tank vapors, since the quality of gasoline produced obviates such necessity. Gasoline storage is carried under 10 pounds pressure.

Boiler Plant

The boiler plant consists of three water tube boilers in high brick settings. Fuel gas supply and water levels are automatically controlled. There is a single smokestack. The installation is designed so that one boiler will always be idle. Under ordinary operation one boiler supplies steam to the preheaters and another supplies the pumps. The piping is so arranged that any boiler can be put on any duty. Separate steam lines were installed, one to the pumphouse, the other to the preheaters. In the boiler house are the feed pumps, a 5-kilowatt turbine driven lighting set for use as auxiliary equipment, and a two-stage motor driven compressor, automatically controlled, to supply starting air for the recompressors.

A laboratory and office building is provided with ample room and facilities.

The loading rack is located 6 miles from the plant proper. There is a four-car loading rack structure built of creosoted pine; counterbalanced draw bridges are used at each car spot. Double piping was installed; one system to handle gasoline from the storage tanks to the car, and the other to carry back the loading vapors to the recovery system. Two 25,000-gallon storage tanks are provided. Loading is by gravity, since the tanks are located much higher than the cars. A small, but complete, compression system is used to treat the vapors liberated during loading, and also those from the storage tanks. These vapors are delivered to the suction of a motor-driven gas compressor and compressed to around 125 pounds, then cooled in a small spray cooling tower. The condensed gasoline and vapor goes to a float-controlled accumulator; the gasoline returning to storage, and the vapor going to atmosphere.

These vapors are small in volume and contain very little desirable material. Water for the cooling tower is circulated by a small motor-driven centrifugal pump. The loading rack pumphouse also houses a motor-driven triplex pump, used to deliver absorption oil to the gasoline plant proper, 6 miles away, through the 2-inch line installed for this purpose. An additional 2-inch line was laid for delivery of product from the plant proper to the loading rack.

The above plant was built by the Stearns-Roger Manufacturing Co. of Denver, Colo., for the J. C. Campbell Co. of Long Beach, Calif.

REFINING VALUE OF EAST TEXAS CRUDE

(Continued from Page 24)

yield of light oil fractions, the residuum was reduced in a vacuum still maintained at a pressure of 1 to 2 mm. mercury absolute. The residuum from sample No. 1 was 26.3 gravity and represented 55.8 per cent of the crude. This was reduced to a 19.5 gravity bottoms, having a pourpoint of 105° F. and a viscosity of 131 at 210° F. The lub distillate taken overhead was 29.9 gravity, with a pourpoint of 75 and a viscosity at 210 of 37.

The second sample was reduced in the same manner and produced a 19 gravity fuel oil bottoms having a pourpoint of 105° F. and a viscosity of 160 at 210° F. The lub distillate was 29.5 gravity, 80 pourpoint, and had a viscosity of 38 at 210° F., each showing favorable properties for the further processing to make into the various neutrals.

Lower Freight Rates

In order to take advantage of the low-priced crude and the chaotic conditions in the East Texas Field, refiners operating plants at distant points have asked for rate reductions from the railroads. New rates were recently published on shipments to the Gulf Coast, Dallas, Fort Worth and other north Texas points, thus leading a long list of rate reductions which will likely be placed in effect.

A rate equal to about 62 cents a barrel has been proposed on shipments of crude to St. Louis and Kansas City, Mo., and vicinity where 100,000 barrels of operating refining capacity is located. The proposed rate has been approved by the carrier's commission and will probably be published in the very near future. A pipe line rate to these points has not been established, but a combination rate will likely be established when the Sinclair Texas Pipe Line Co. completes a 12-inch line from the East Texas Field to Mexia, where it will connect with the Prairie Pipe Line Co. system.

At present only the pipe line rate on Oklahoma crude moving into Kansas City and into St. Louis may be taken as indicative of the approximate rate from East Texas to these points. These rates are, in round numbers, 31 cents to Kansas City and 37 cents to St. Louis. In addition to the pipe line tariff, there is a usual gathering and storage charge of 20 cents per barrel in the case of transporting the oil by pipe line. Thus even if the final pipe line rate from East Texas is raised to equal the cost of getting the crude by rail, the higher refining value of the East Texas crude will more than overcome the difference in the cost of transporting East Texas oil when compared to running Oklahoma and North Texas oil.

Freight rate reductions have already been made to a number of Mid-Continent points and others have been approved by the carrier's committee and will likely be published in the very near future. A partial list of the points effected within the general areas is shown here.

RAIL RATES IN EFFECT OR PROPOSED AND LIKELY TO BE PLACED INTO EFFECT IN NEAR FUTURE
(per barrel)

Arkansas and Louisiana

(In effect)

Camden	.28
Smackover	.34
Shreveport	.22

North Texas

(In effect)

Fort Worth	.34
Dallas	.34
Wichita Falls	.44

Gulf Coast

(In effect)

Houston	.34
Beaumont	.34
Port Arthur	.34
Plaquemine (Baton Rouge)	.34

Kansas

(Approved by carrier committee)

Coffeyville	.56
Arkansas City	.59
Chanute	.58
Eldorado	.62
Neodesha	.62
Wichita	.62
Augusta	.62

Missouri

(Approved by carrier committee)

St. Louis	.62
Kansas City	.62

One factor which has not been considered in the above comparison of costs, however, is the matter of loading costs on the oil gathered in the East Texas fields, and transported by one of a number of short pipe lines leading to loading racks. This charge will vary greatly but is said to range between 2½ and 10 cents. In some cases the producer is standing the cost and large quantities of crude is now said ready to be loaded in cars for 15 cents a barrel as a total cost to the buyer.

Much of this crude is moving to the Gulf Coast. Only one company has posted a pipe line tariff to the Gulf, namely the Magnolia Petroleum Co., and this has been established at 20 cents a barrel. The delivery charges will include a 20-cent gathering and storing cost, making 40 cents a barrel in all. Other pipe line tariffs will probably approximate that of the Magnolia and will be published as soon as the various lines are ready for use. One of these lines under construction will connect the field with the Gulf Pipe Line Co. system leading to the Gulf Refining Co.'s 125,000-bbl. plant in Port

Arthur. Another will connect with the Texas-Empire system serving refineries on the Gulf and East Coast. The new Humble line will serve the Humble Oil & Refining Co.'s 125,000-bbl. plant at Baytown and the Standard Oil Co. of New Jersey's large refineries along the Atlantic Coast.

In summary, it might be said that East Texas oil is advantageously available to the Gulf Coast refining area which holds 660,000 bbls. of the country's refining capacity, North Texas, Arkansas and North Louisiana which accounts for 300,000 bbls. capacity and the entire East Coast accounting for 600,000 bbls. of capacity. In addition, the crude may be run in some of the Chicago and Ohio plants, aggregating a capacity of 300,000 to 400,000 bbls. per day and as a total it might be stated that this crude could readily find its way into 60 per cent of the refining capacity of the United States. It is also known that appreciable quantities of the oil is being considered for running in foreign refineries, particularly in new plants in France and Italy.

This naturally does not mean that East Texas oil will be run in domestic refineries in anywhere near the quantities suggested by the capacities of the respective areas, but the nearness of the new field to the market does show that most refiners are in a position to buy "cheap oil" and if uncontrolled production continues they will do so. In the end, however, no good can come to any group but, instead, "cheap crude" will penalize the entire industry.

Where Crude Is Going

At the present time it is impossible to state exactly where all of the oil is going, but various reports indicate that from 110,000 bbls. to 130,000 bbls. are moving from the field by tank car daily. Approximately 30,000 bbls. is being refined in local refineries, including those in North Louisiana and Arkansas, and about 60,000 bbls. is being moved by trunk lines. This accounts for 210,000 bbls. production, but as this quantity mounts the takings by newly completed pipe lines will probably increase accordingly.

Future Outlook

Under the plan of the Texas Railroad Commission the area included in the East Texas Field is divided into three sections:

1. Henderson section, including all of the acreage in Smith and Rusk Counties south of a line east and west through Overton.

2. Kilgore section, including all of the area both of the Overton line to the Sabine River.

3. Longview section, including all acreage north of the Sabine River.

With this definition, East Texas includes the Joiner, Bateman and Lathrop Pools and does not include the Van Pool also known to have a high potential production. Defining this as the East Texas Field, the commission attempted to establish proration so that by April 10 the field would be allowed to produce 90,000 bbls. and step by step on June 15 would be increased to 130,000 bbls.

The field is now making more than 240,000 bbls. and nearly this much is being removed from the field and is going to refineries, indicating that the volume moving above the allowable, is very likely replacing oil ordinarily purchased from other Mid-Continent sources.

This production is coming from about 240 wells and there are about 400 wells now drilling. The time required to complete a well naturally depends upon the type of equipment used but 7 to 12 days is all that is usually consumed. In one instance 3,015 feet of the hole was drilled in 52 hours. In another instance a well was completed 90 hours after the surface pipe was set. The average dry hole is said to cost about $12,000 and the average completed well and tankage about $25,000. These facts are pertinent only in helping to gain a clearer understanding of what might soon lead to an even more serious flood of East Texas crude, which in turn will try to force its way on to the market and will be made readily available to a greater number and to more distant refining areas.

INCREASED DEMAND FOR OIL IN OKLAHOMA CITY FIELD IS MET

OKLAHOMA CITY, Okla., Apr. 20.—An increase in the allowable production flow of the Oklahoma City Field was ordered by the Oklahoma Corporation Commission effective today. For the balance of the month the field will be permitted to produce 165,000 bbls. a day, and during May, 175,000 bbls. a day. The allowable for the field has been 125,000 bbls. a day.

No action was taken by the commission on the petition of Ray Collins, state proration umpire, to lift the curtailment on all wells in the State producing up to 10 bbls. a day and to increase the allowable to 20 bbls. a day. Chairman Paul Walker declined to state when the commission would consider the petition.

The commission fixed the allowable flow from wells that are even with production in the Oklahoma City Field through the month of April, at 7 per cent of the potential, which was estimated at 2,240,000 bbls. a day, or 156,845 bbls. a day, and for the month of May at 6 per cent of the potential, which was estimated at 2,549,489 bbls. of oil a day, or 152,970 bbls. The difference in the allowable production was to come from the underproduced wells, which would increase the daily production for April to 165,000 bbls. and for May to 175,000 bbls. a day.

Hearing on Umpires' Petitions

The hearing before the Oklahoma Corporation Commission on April 17 and 18 was on petitions from Otto Bradford, Oklahoma City Field umpire, and Ray Collins, state umpire.

Otto Bradford testified that on a basis of the tests now concluded, the potential production of the Oklahoma City Field would show on May 1 approximately 7,158,000 bbls. of oil a day. Potentials on 500 wells were completed so far out of a total of 756 wells completed in the field.

Purchasers Are Heard

Representatives of the purchasing companies testified as to their requirements from the Oklahoma City Field during the three-month period and estimated a larger amount of crude oil could be moved from the field due to the increased seasonal demand.

R. S. Ellison, president of Stanolind Pipe Line Co. and Stanolind Crude Oil Purchasing Co. was one of the witnesses during the hearing. Mr. Ellison testified that the pipe line shipments out of the field in March were 1,131,920 bbls. of crude oil, and the probable April shipments would be 1,157,130 bbls. of crude oil. He estimated the May shipments would be 1,195,700 bbls.

R. S. B. Clay, attorney for H. F. Wilcox Oil & Gas Co. testified that oil shipments for the company for 41 days during March and up to and including April 10, were 44,544 bbls. He further testified the company would be able to take from 15,000 to 20,000 bbls. of oil daily from now on compared to the 1,000 bbls. a day average of the last month. He said, however, the H. F. Wilcox Oil & Gas Co. would be forced to buy the crude oil at its own price.

J. D. Wrathers, with the Amarillo Producing & Refining Co. testified the total purchases of the firm from February 24 to April 15 were 28,121 bbls. of crude oil, but that the company would probably delay buying more oil until the gasoline market improves.

C. G. Kibben, for the Petroleum Pipe Line Co., testified the company shipped 26,691 bbls. of oil in March, and estimated the shipments would be increased to 40,000 bbls. of oil in April.

E. B. Marlow, in charge of the purchases of crude oil for the Sinclair Oil & Gas Co., estimated the company's total purchases and shipments for April will show an increase of approximately 41,000 bbls. During March a total of 932,178 bbls. of oil was purchased of which only 265,666 bbls. was from the Sinclair Oil & Gas Co. properties.

The Continental Oil Co., which purchased in March an average of 8,900 bbls. of oil a day, estimated it would increase the shipments in April to 11,000 bbls. a day and in May 13,000 bbls. a day, according to E. H. Skinner. Mr. Skinner stated all the oil purchased by his company in the Oklahoma City Field was gathered by other pipe lines.

J. S. Anderson, of Anderson-Prichard Oil Corp., said the company's shipments had increased from 38 bbls. daily in March to an average of 1,180 bbls. thus far in April. He estimated the May requirements would be from 1,300 to 1,500 bbls. a day.

H. A. Alford, Shell Petroleum Corp., said that the company's daily average for March was 4,728 bbls. of oil, with an estimated average of 6,000 bbls. for April, and an expected increase in May to approximately 12,000 bbls. daily.

Carter Oil Co. sent a certified statement showing the company's daily average shipments out of Oklahoma City to have been 16,000 bbls. from March 1 to April 1, with a statement that it would continue this, with probably a slight increase during the next two months.

The May estimate of the Indian Territory Illuminating Oil Co., according to R. L. Gordon, vice president, was placed at 8,000 bbls. April averages thus far were 8,705 bbls. compared to March purchases of 3,021 bbls.

W. A. Wellman, Peacock & Peveto Oil Co., estimated the May purchases would be 1,500 bbls. a day all the oil shipped from the Julian Oil & Royalty and Century Petroleum Corp. wells.

J. S. Sidwell, Prairie Oil & Gas Co., reported no purchases for March and thus far in April, but expected to continue shipping its allowable from its own leases, which have averaged 1,442 bbls. of oil since March 1.

E. E. Snell, Empire Oil & Refining Co., estimated May purchases at 35,000 bbls. daily, compared to the 22,000-bbl. average for March.

F. G. Blackwood, Century Petroleum Corp., said the company was purchasing oil only from its own leases, and estimated the April shipments at 3,300 bbls. and May at the same amount.

SHOW PROPERTIES OF LIQUID HYDROCARBON

(Continued from Page 114)

low thermal value to meet calorific standards and they are often employed as a base material for manufacturing gas, in meeting peak load conditions, and in butane-air carburetion plants.

While these forms of gaseous fuel are not expected to compete with established artificial gas plants, natural gas pipe lines, and other similar producers, they possess features that make them worthy of consideration as pioneers and for the servicing of isolated localities outside of the range of normal public service.

SOME OF THE PHYSICAL CHARACTERISTNCS OF GASES COMPOSING NATURAL GAS AND OBTAINED AS BY-PRODUCTS IN THE PRODUCTION OF MOTOR FUELS

Chem. symbol	Name—	Boiling point of atmospheric pressure	Pressure developed when liquid is held in a closed container @ 70°F.	@ 100°F.	B.t.u. value per cu.ft.	per lb	Weight per gallon	Cu. ft. per pound
CH_4	Methane	—265° F.	.....	.....	1,008	23,790	3.42	23.626
C_2H_6	Ethane	—135° F.	750 lb	.....	1,763	22,240	3.71	12.594
C_3H_8	Propane	—49° F.	120 lb	200 lb	2,519	21,620	4.46	8.587
C_4H_{10}	Butane	+34° F.	33 lb	60 lb	3,274	21,320	4.997	6.511
C_5H_{12}	Pentane	+97° F.	0 lb	10 lb	4,029	21,130	5.214	5.248
C_6H_{14}	Hexane	+156° F.	None	.....	4,784	21,010	5.519	4.393
C_7H_{16}	Heptane	+208° F.	None	.....	5,540	20,920	5.727	3.78
C_8H_{18}	Octane	+259° F.	None	.....	6,295	20,850	5.970	3.315
C_9H_{20}	Nonane	302° F.	None	.....	7,050	20,800	6.1	2.954
$C_{10}H_{22}$	Decane	343° F.	None	.....	7,805	20,760	6.24	2.662
$C_{11}H_{24}$	Undecane	383° F.	None	.....	....	20,730	6.39	....
$C_{12}H_{26}$	Duodecane	419° F.	None	.....	....	20,700	6.5	....
$C_{13}H_{28}$	Tridecane	453° F.	None	.....	....	20,680	6.6	....
$C_{14}H_{30}$	Tetradecane	487° F.	None	.....	....	20,650	6.66	....
$C_{15}H_{32}$	Pentadecane	518° F.	None	.....	....	20,640	6.72	....
$C_{16}H_{34}$	Hexadecane	549° F.	None	.....	....	20,620	6.79	....

RESPONSIBILITIES OF PLANT SUPERINTENDENT

(Continued from Page 114)

to be off-color, therefore it pays to be safe with any self-control.

Relation of Operators

Operators can make it easier on one another by telling their reliefs of any trouble or change that has been made during their shifts.

Operators get a kick out of making a little more gasoline than the others, or making something run a little smoother.

Teaching a New Man to Operate

When starting to teach a new man to operate, he should be told just enough to get by with. If you try to tell him about everything at the same time, it will go in his head cross ways, and he won't know as much when you get through telling him as he did when you started. You should teach him one certain thing, and know that he knows it before starting on another.

You can tell a fellow how to do anything a time or two, but he won't understand as well as he should until he has the experience.

Most new operators are easily excited. You should tell them the most important things to do in case something serious goes wrong. I think it helps a new man if the boss or the men working with him show that they have a little confidence in him. It will help him to be careful and to do his best.

Safety

Safety is a very important thing around a gasoline plant.

A fellow can go to a safety meeting and hear about others being hurt. This won't keep him from a serious accident, but hearing these things will make him keep safety in mind, and by closely watching for dangers and avoiding chance taking, a fellow can keep from getting hurt. A fellow who gets excited and is negligent can cause a great loss to both the company and himself.

And another thing, any one who has tried to take the gravity of gasoline on a windy day, knows how mean a job it is. I think it would save a fellow from saying things he ought not to, if some one would invent a hydrometer with the scale all the way around.

START YOUNG COUNTY LINE

FORT WORTH, Tex., Apr. 18.—The Panhandle Refining Co. of Wichita Falls has started laying a 2-inch pipe line from its Steel and Cox leases in the Indianola Railway Survey, eastern Young County, where it opened a new wildcat pool several months ago, to the Rock Island railroad where a loading rack is being constructed. The high gravity oil will be shipped to the company's refinery at the above mentioned place.

REED OIL CO. ELECTION

MUSKEGON, Mich., Apr. 18.—Officers and directors of the Reed Oil Co. were re-elected at the annual meeting, as follows: President, Edward R. Swett, Sr.; vice president, J. Brooke Reed; secretary, C. N. Sessions; treasurer, William H. Wilson; and directors, Paul R. Beardsley, Francis E. Lovelace and Frank E. McKee. Charles D. Hoffman has been named field superintendent.

"UNREFINABLE" OILS AS CRACKING STOCK

(Continued from Page 30)

analyzed by the A.S.T.M. distillation method.

Cracking California Kerosene

Kerosene distillate from California crude oil was cracked at relatively low temperature and pressure to yield 64.8 per cent of high knock-rating motor fuel. The cracking stock analyzed as in Table 10.

TABLE 10

A.P.I. gravity	38.6
Sulphur, per cent	0.14
Initial °F.	358

(A.S.T.M. 100 cc. distillation)

Per cent distilled over	Temp. °F.
10	425
20	440
30	460
40	475
50	490
60	507
70	530
80	557
90	600
Endpoint	682
Per cent over at 572° F.	83

This California kerosene was subjected to the simultaneous cracking and coking, or nonresiduum, method of cracking. The process was carried out at an average temperature of 825° F. under a pressure of 275 pounds per square inch.

The pressure distillation yielded 86.4 per cent of cracked distillate of 49.4° A.P.I. gravity which analyzed as in Table 11 by the Hemple glass-bead column method.

TABLE 11

Initial °F.	86

Per cent distilled over	Temp. °F.
10	165
20	208
30	249
40	295
50	347
60	382
70	420

The cracked distillate, in turn, was treated and distilled to a 437° F. endpoint gasoline and a bottoms which is a good Diesel or tractor fuel. The yield of gasoline was 64.8 per cent of the charge with a gravity of 51° A.P.I., and the 13.9 per cent of Diesel or tractor fuel showed an A.P.I. gravity of 30.8°. The other products obtained from cracking kerosene comprised 650 cubic feet of gas and 12.9 pounds of coke per barrel of charge.

The cracked gasoline was water white, doctor sweet, noncorrosive, light stable, low in gum, and contained less than one-tenth of 1 per cent of sulphur. Chemical analyses showed the following percentage contents of the various hydrocarbons.

Hydrocarbons—	Per cent
Unsaturates	17.3
Aromatics	18.4
Naphthenes	20.0
Paraffins	44.3

Diesel or Tractor Fuel

The pressure distillate bottoms showed a low cold test and made a good Diesel or tractor fuel. The B.t.u. content is about 19,500 per pound. Table 12 shows the properties of the product.

TABLE 12

A.P.I. gravity	30.8
Viscosity (Saybolt Universal 100° F.) secs.	37
Conradson carbon	Trace
Initial °F.	455

(A.S.T.M. 100 cc. distillation)

Per cent distilled over	Temp. °F.
10	457
20	463
30	467
40	470
50	483
60	490
70	506
80	526
90	552
Endpoint	660

ST. LOUIS A.P.I. MEETING ENCOURAGES INDUSTRY

(Continued from Page 21)

suggested stocks of gasoline at the end of each month are as follows: April, 46,327,000 bbls.; May, 43,768,000 bbls.; June, 39,841,000 bbls.; July, 34,534,000 bbls.; August, 29,893,000 bbls. and September, 27,184,000 bbls. Before the close of the period it is expected that the committee will submit another report covering operations for the succeeding six months.

OIL BOARD ANNOUNCES CORRECTION

The Federal Oil Conservation Board announces a correction in its report of the Voluntary Committee on Petroleum Economics (published in The Oil and Gas Journal last week, page 131), which calculated average stock reduction at 16,082 bbls., when it should have read 16,082,000 bbls.

A.P.I. Resolution

The following resolution was adopted by board of directors of American Petroleum Institute:

"The board has today reviewed two reports on the economic situation of the petroleum industry covering the period April 1 to September 30, 1931. The first report is that of the Committee on Petroleum Economics of the Federal Oil Conservation Board; the second, the report of the Committee of Refining Statistics and Economics of the institute's Division of Refining.

"In transmitting to the institute the report made on April 8 by its Committee of Petroleum Economics, Chairman Ray Lyman Wilbur, of the Federal Oil Conservation Board, has written: 'It is the opinion of this board that this report is a conservative survey of national petroleum conditions and that the suggestion advanced and the estimates of probable consumption and needed requirements for the period April 1 to September 30 should form the basis for constructive discussion and action by the petroleum industry generally.'

"The Federal Oil Conservation Board's committee estimates that the maximum stocks of gasoline on hand on September 30, 1931, should not exceed 30,600,000 bbls; the institute's Committee on Refinery Statistics and Economics estimates that the economic level for gasoline stocks at refineries on October 1, 1931, should be 27,184,000 bbls.

"In view of the importance and value to the petroleum industry of these two reports, it is resolved by the board of directors of the American Petroleum Institute:

"1. That the thanks of the institute and of the petroleum industry is expressed to the Federal Oil Conservation Board for procuring the report of its Volunteer Committee on Petroleum Economics and the submission of said report to the institute for consideration at this time.

"2. That the thanks of the board be expressed to the institute's Committee on Refinery Statistics and Economics and its subcommittee and that its report be received and filed.

"3. That the petroleum industry be requested to bear in mind the expressions of these two surveys relative to gasoline stocks in order that individual members of the industry may conduct their operations with the benefit of that information."

BASIS FOR MARKET ADVANCE STRENGTHENS

(Continued from Page 20)

favorable showing in face of the low quotations posted on other products.

Gas Oil and Fuel Oils

The industrial grade of gas oil was freely offered at 1⅛ to 1¼ cent, the lowest this material has been quoted since cracking has become a factor in refining. This low price has not served as an inducement for refiners equipped with excess cracking capacity to purchase supplies on the open market, however, because of the weak gasoline prices. Similarly little encouragement is being offered this market in sales being made to artificial gas plants because of the declining seasonal demands from these plants for their product.

The higher gravity fuel oils were generally quoted from 2½ to 5 cents a barrel below the prices quoted a week ago. Cold test specifications are becoming of lesser importance as the weather moderates and because of this a larger quantity of material is made available and the lower gas oil market has also acted to depress the high gravity fuel market.

The low gravity fuels are moving slowly, but there is no willingness on the part of refiners to further reduce prices. The production of low gravity fuel has been decreased until it does no more than meet demands and most refiners have considerable flexibility in their sales program for this material.

Lubricants and Wax

Very little change in the Mid-Continent lubricating oil market was shown during the week. The demand for motor oils has improved and as soon as the uncertainty of Mid-Continent crude prices is removed, the market is thought to be in a position to reach for higher levels. Bright stocks remain particularly weak and the high cold test stocks are being quoted very near those of the high cold test grades, causing the whole market to weaken in tone. Strong competition from outside refining centers has restricted the outlet for Mid-Continent bright stock and its market has become more dependent on conditions in these other centers.

Wax is moving at a normal rate and shipping instructions are being given sufficiently in advance to give the local refiners an adequate outlet. Slightly lower wax prices in the Pennsylvania area has been a disturbing factor, however, over the past week.

EAST TEXAS FIELD WILL BE CURTAILED

(Continued from Page 32)

which with 5 cents gathering charge would make a field coast of 70 cents. The present rate to tidewater is 25 cents, loaded, a 20 per cent cutoff which would make 20 cents, giving a total delivered cost of 90 cents as compared with 84 cents for Pecos County oil. This, however, does not take into consideration the fact that much East Texas oil is being bought at prices as low as 17½ cents, which would make the delivered price at the Gulf much lower than Pecos County, but those low prices are believed to be local and temporary, with Humble's new schedule being a step to stabilize them.

The proposed reduction in pipe line tariff by the Humble Pipe Line Co. has no relationship to the bill now before the state legislature in which it is sought to regulate pipe line tariffs in the State to limit the returns to a maximum of 10 per cent of the investment with a minimum revenue of 6 per cent. The action by Humble has been under consideration many months and is being taken with a view to increasing the volume of business through lines touching certain areas, whose crude runs have been greatly curtailed through the shift in demand of crude to the newer and flush East Texas district.

Mr. Farish's Statement

The full statement of the Humble companies as issued by W. S. Farish, president of the Humble Oil & Refining Co., follows:

"At the request of those in charge of the meeting at Tyler on January 15, 1931, Humble Oil & Refining Co. there made a statement in which it expressed the hope that those interested in the new East Texas oil field would reap the greatest benefit from the oil resources in that territory and the belief that such benefits would be received under some system of orderly and conservative production. It announced its purpose to enter and serve the field as a purchaser and transporter of crude in the event orderly production should be established in such way as to make such service by it physically possible.

"The Railroad Commission of Texas has attempted to provide a method of orderly production for East Texas. We feel that orderly production will be beneficial to the district and that the best interests of both producers and royalty owners in the East Texas oil field will be served by the carrying out of any commission order for orderly production. This company reiterates its purpose of co-operating with the constituted authorities in their conservation efforts in this territory.

"Assuming that the proper organization and machinery for the establishment and maintenance of orderly production, including actual allocation of allowable amounts of production, will be promptly set up with subsequent adjustments that will give East Texas a fair participation in the market, we hereby announce that we will purchase oil in the district ratably in accordance with allowable production percentages established by the Railroad Commission and its agents, and until further notice we will pay for such oil the prices shown in the attached schedule. Acting under such assumptions, we are proceeding to install gathering facilities to enable us to make connections to the properties of our customers and to start making purchases as soon as the commission's order is actually effective. Pending definite determination of our allowable production by the commission or its agents, and in order to facilitate the working out of this program, we are restricting the production from our own wells to that necessary to fulfill our lease obligations and protect our properties against offset production.

Largest Field in United States

"The East Texas Field appears to be

TABLE 6

Test No. (from crude oils)—	A	B	C	D	E	F
Motor fuel, per cent of charge	46.3	48.2	52.1	44.5	49.3	46.0
A.P.I. gravity	50.9	49.1	49.4	48.2	49.3	49.5
Initial	120	116	117	138	107	126
20 per cent over °F.	221	221	227	242	209	196
50 per cent over °F.	297	300	303	310	297	229
90 per cent over °F.	397	397	402	404	396	396
Endpoint	437	435	435	439	434	436

Test No. (from topped crudes)—	1	2	3	4	5	6	7	8	9
Motor fuel, per cent of charge	48.8	57.2	56.2	58.0	58.5	57.0	48.1	47.1	61 2
A.P.I. gravity	52.5	53.5	52.8	54.3	49.7	51.6	52.5	52.0	54.3
Initial	120	119	116	120	110	113	120	111	117
20 per cent over °F.	222	213	209	213	209	210	211	214	213
50 per cent over °F.	294	298	292	298	303	305	289	303	299
90 per cent over °F.	396	398	399	402	406	402	393	400	403
Endpoint	436	439	436	435	439	437	436	436	437

TABLE 7

Test No. (from crude oils)—	A	B	C	D	E	F
Diesel, furnace or tractor fuel:						
Per cent of charge	11.7	21.3	19.7	12.4	7.4	14.6
A.P.I. gravity	19.1	18.8	18.4	19.6	18.6	21.0
Per cent over at 572° F.	84.0	80.0	78.0	82.5	82.0	82.0

Test No. (from topped crudes)—	1	2	3	4	5	6	7	8	9
Diesel, furnace or tractor fuel:									
Per cent of charge	15.9	15.8	11.3	21.2	7.3	15.8	16.7	17.3	17.3
A.P.I. gravity	32.3	26.9	21.8	27.3	17.5	25.3	20 7	29.7	26.3
Per cent over at 572° F.	76.0	89.0	77.0	87.0	81.0	84.0	78.0	84.0	87.0

TABLE 9

	Pressure distillate— Untreated	Treated	Gasoline	P.D. bottoms
A.P.I. gravity	54.6	52.8	56.5	23.8
Sulphur, per cent	0.51	0.37	0.15	1.3
Initial	84	86	85	440
20 per cent over at °F.	175	193	180	
50 per cent over at °F.	385	396	382	(*)
90 per cent over at °F.	432	462	405	
Endpoint	470	554	430	

*85 per cent over at 600° F.

the largest oil field that we have ever had in the United States and several times the size of any other Texas field. It apparently will cover approximately 100,000 acres of land highly productive of oil. The major part of our Texas oil is marketed at tidewater. This field is nearer tidewater than the majority of Texas oil fields. The oil is of as good, or perhaps slightly better, quality than the average Mid-Continent or Texas crude of similar gravity. The considerable quantities moving to market have already affected product prices. All these facts force the conclusion that the price of East Texas oil will control the price of all competitive oils. Low rail and pipe line rates are in effect for the movement of this oil to the Gulf, where the major part of it will naturally and economically find its market. Other crudes sold in the same market must sell at prices which make their delivered cost proportionate to the delivered cost of East Texas oil.

New Problems

"The discovery of this tremendous field has brought new problems before the industry, affecting not only the production and sale of crude and products, but transportation as well. Obviously numerous adjustments are necessary as a consequence of so important a development. Humble Oil & Refining Co. recognizes that the sale of crude from older existing fields cannot continue without adjustment in the delivered cost of such crudes to a basis proportionate to East Texas. In an effort to effect some of the adjustments which are essential to the maintenance of the movement of oil from other districts, and to help producers in other fields to meet the burden of competition of East Texas oil, Humble Pipe Line Co. is proceeding to reduce its tariffs affecting practically its entire system in connection with which our total delivery charges on crude oil will be reduced approximately 20 per cent, effective as early as the interstate schedules can be made to apply.

The attached crude price schedule effective today reflects the attempt of Humble Oil & Refining Co., considering the confused conditions existing in present markets, to equalize prices of crudes in other fields in Texas with the existing Mid-Continent price being posted for East Texas crude and is based on the revised pipe line rates above referred to. This should make easier the marketing of oil from other areas in competition with East Texas, and will aid the Railroad Commission in its effort to increase the taking of oil from these areas.

"The maintenance of the purchasing policy here announced for East Texas and the maintenance of the attached price schedule posted for all areas in the State, are dependent upon better product values and upon the success of the Railroad Commission in the enforcement of its conservation program throughout the State.

APPROVES GASOLINE AND LUB OIL SPECIFICATIONS

(Continued from Page 21)

por pressure at 37.8° C. (100° F.) exceeds 8 pounds per square inch.

H-2. Departments purchasing gasoline for use in tropical areas require a maximum vapor pressure of 8 pounds per square inch throughout the year.

WASHINGTON, D. C., Apr. 21.—Specifications for lubricating oils, Class D, approved by Federal Specifications Board follows:

F-2. Each sample shall be accompanied by report of tests listed in Paragraph F-3, conducted in the vendor's laboratory, according to the methods for testing given in federal specifications VV-L-791, except that the Sligh oxidation number shall be determined according to the method described in proceedings of the American Society for Testing Materials, Vol. 27, Part 1, pp. 461-468; 1927, using precipitation naphtha described in proc. A.S.T.M., Vol. 30, Part 1, p. 1,131; 1930, viscosities are to be given at both 130° and 210° F. for each sample. Samples will not be considered unless accompanied by a complete report of tests as described in this paragraph.

F-3. Oils of the various grades shall fall within the viscosity limits for the grades as given in Table 1; they shall meet all the tests listed as "for passing" in Table 2, and shall meet the following requirements in regard to oxidation, neutralization number, and corrosion;

(a) Sligh oxidation number. The Sligh oxidation number shall not be higher than 40.

(b) Neutralization number. Method 510.31. The neutralization number shall not be higher than 0.30.

(c) Corrosion. Method 530.31. A clean freshly polished copper strip shall not show more than extremely slight discoloration when submerged in the oil for three hours at 212° F.

F-4. Oils Nos. S.A.E. 20 and S.A.E. 30 may be required by the purchasing department to have a maximum pour-point of 15° F.

F-5. Credit requirements. Oils to be acceptable shall meet the requirements for passing listed in Paragraph F-3 and shall obtain at least four credits; one credit will be allowed for each of the limits listed "for credit" in Paragraph F-3 which the oil meets; one credit will be allowed if the Sligh oxidation number is not higher than 20; one credit will be allowed if the neutralization number is not higher than 0.10; and one credit will be allowed any oil for which the viscosity at 130° F. is not higher than the value given in Table 3 for an oil of the same viscosity at 210 ° F., E.G. An oil having a viscosity of 49 seconds at 210° F. will not receive a credit if its viscosity at 130° F. is higher than 138 seconds.

TABLE 1

S.A.E. No.	Viscosity Secs. at 130°F. Not less than	Viscosity Secs. at 130°F. Less than	Saybolt Universal at 210°F. Not less than	Saybolt Universal at 210°F. Less than
20	120	185	...	...
30	185	255	...	...
40	255	..	...	75
50	...	...	75	105
60	...	...	105	125
70	...	...	125	150

TABLE 2

S.A.E. No.	Minimum flashpoint For passing °F.	Minimum flashpoint For credit °F.	Maximum pourpoint For passing °F.	Maximum pourpoint For credit °F.	Darkest A.S.T.M. color No. For passing	Darkest A.S.T.M. color No. For credit	Maximum A.S.T.M. carbon residue For passing %	Maximum A.S.T.M. carbon residue For credit %
20	340	400	40	0	7½	5	0.50	0.10
30	350	410	40	0	8	6	0.80	0.15
40	370	425	40	5	6 dil.	7	1.00	0.25
50	395	445	40	10	7 dil.	7	1.40	0.40
60	425	475	40	15	8 dil.	8	1.70	0.70
70	460	510	40	15	8 dil.	8	2.00	1.00

INTERESTING COMPARATIVE DATA ON PLUNGER PUMP OPERATION

By E. T. Sholtus*

For the past several months we have been making different type plungers for the purpose of determining just what amount of wear we were actually getting on the different makes and kinds of plungers we were using, just where this wear occurred, and why, if that was possible.

We have collected considerable data of this kind and have prepared a table showing a part of this information in order to check up on ourselves, as to whether or not we were getting the most out of the plungers it was possible to get, as well as checking the direct cause of the excessive wear as obtained in the Smackover Field.

Our work in this respect has not covered a long enough period of time to draw any definite conclusions; however, we believe that a few deductions can be drawn.

First: We find that sand alone is not the only factor entering into the cause of excessive wear. In fact, it may not be the present principal cause of excessive wear in a number of our wells; we refer to corrosion. We have a number of wells in different parts of the field that micrometer from .002 to .005 wear that make very little if any sand, running on an average of about 30 to 40 days. Under that condition we cannot say that sand was the principal cause of this wear. On the other hand, we do know that a corrosive action is attacking our balls and seats, rods and tubing; therefore, it is not unreasonable to assume that this agent is one of the principal causes for excessive wear on our plungers and liners.

Second: We believe that the design of valves and cages has a lot to do with the action of pounding; and this pounding action of the plunger will cause considerable vibration to set up in the walls of the same, which in a short period of time no doubt will cause crystallization. Therefore, we believe it behooves us to select valves and cages that allow a smooth action on the plunger, which will not only eliminate the above considered cause but will increase the amounts of fluid that can be handled as well as be a big saving on rods.

Third: Under sand conditions that the ordinary plunger pump will take care of, yet causes excessive pulling for changing cups, etc., we find that the Barnwell or open type plunger will give much longer runs than the regular type. We have a few of this type running at present which we have micrometered, after running from 40 to 60 days, which show from .002 to .016 wear, but in every case gave a longer run than the regular. This we think is due to the design of this plunger, that is, being open at top with the valve walls out to the walls of the liners as wear takes place. The taper on top of course skims the sand into the plunger from the liner walls and then flushes it out on the downward stroke. We also found that this type plunger gave us a little more capacity than the regular.

Fourth: Extra hard plungers made to fit close give a very smooth, efficient pumping action, much smoother action than the softer plungers, but are more subject to corrosion and for that reason will not give as long runs as the regular type. This type of plunger, we believe, would be very satisfactory if sand was the only factor involved.

It is unfortunate that we were not able to get some data on liner wear in connection with plunger wear. However, we want to give you a few comparisons of plungers taken from different wells under different conditions which we know exist.

After we had started checking our plungers with a micrometer the fact was brought out that in those wells in which corrosion seemed most active the plungers showed the most wear. For example: A plus one plunger was run in our No. 1 Berg April 30 and pulled June 3, or for a period of 35 days. It showed .003 wear near the top and .002 near the bottom. This plunger was then followed with a plus two and pulled July 7, which showed an average wear of .003 for a period of 34 days. This well is highly corrosive but makes very little sand. In comparison with that well we will give you some data on our No. 4 Berg, which is situated on the same lease, but is not nearly so corrosive and makes about the same amount of sand, also about the same amount of fluid. This plunger was a Barnwell type, being a medium in size, and was run May 7, pulled July 7 showing .001 wear. Again, taking our No. 3 Berg which is very corrosive near the bottom, but which makes very little sand, in which a plus two plunger (old style) was run March 13, pulled May 3 for a period of 31 days showing .004 wear. This plunger was followed with a plus three but was pulled before it had given maximum service due to the tubing leaking. However, a new barrel was run May 10 in which was placed a medium plunger, American Petroleum Institute specification, and was pulled June 4 showing .001 wear. This plunger was replaced with a plus one and pulled July 16 showing .003 wear for a period of 42 days. This plunger was replaced with a plus three and pulled August 29 showing .004 wear for a period of 44 days.

We could continue to pick a number of such examples but do not wish to burden you with too many figures. However, the thing we want to bring out, from these checks and observations, is that the harder the plunger the more active the corrosion, the softer the plunger the less active the corrosion. On the other hand the harder the plunger the longer the life it has under sand conditions only and the softer the plunger the more wear under these same conditions. If we could eliminate the corrosive condition in the Smackover Field, then we could eliminate a great number of the problems that have been confronting us.

There are a number of good plunger type working barrels on the market, all of which check up very closely under similar working conditions. We think the important thing is to have them properly lined, kept in good condition by proper handling in the field, being sure that the collars are tight and in good shape. The only improvement that we would suggest in the barrels would be in the valves and cages. It is our opinion that further experimenting can be done to advantage in perfecting the cages and standing valve bodies, so that there will be the least friction possible exerted on the fluid as it passes through these openings. The plunger type pump is designed primarily to handle large quantities of fluid, under adverse sand conditions, and has proved to be a very efficient pump in the Smackover Field. It is not as smooth running a pump as the fluid pack, which we use for excessive sand wells, and for that reason will give a little more rod trouble over a period of time. We find the fluid pack will help us clean up a bad sand well by pumping with it for several months, then we can put in the plunger pump and use it very satisfactorily for several more months and so on. The fluid pack of course will not handle the quantity of fluid that the plunger pump will and for that reason is not so desirable for the large capacity wells.

Summary

In summary then we might state that (1) we do have a corrosive problem that has a lot to do with the wear on our plungers and liners; (2) that sand conditions are gradually getting a little better, but is still quite a factor for wear; (3) that excessive pounding, either due to improper valve design or lack of fluid, is another agent for wear and distortion of plungers; (4) that plunger type pumps are the most efficient for handling large quantities of fluid where sand problems prevail; (5) that a very hard, close fit type of plunger is very efficient but seems to be more susceptible to corrosive action and for that reason would not recommend it for that class of wells, however, under sand conditions only we believe that it would prove very efficient, as it no doubt would have much longer life under those conditions than the regular plunger; (6) that considerable improvement can yet be made in perfecting standing valves and traveling valves for the plunger type pumping action and also increasing further their rated capacities; (7) that the fluid pack type pump is very efficient in excessively bad sand wells up to its capacity and works in very nicely with the plunger type pump by the follow-up system. Due to its smoother action it is easier on the rods.

*Paper read before the El Dorado, Ark., chapter of American Petroleum Institute.

DAN C. STEELE, SR., FUNERAL

HOUSTON, Tex., Apr. 20.—Funeral services for Dan C. Steele, Sr., formerly field superintendent of the Venezuela Gulf Oil Co. in Venezuela, were held in Houston April 19. Mr. Steele died in Cabimas, Venezuela, March 29. He had been associated with the Gulf companies since 1917 and had been in South America since 1929.

NORTH GERMANY PROMISED BIG DEVELOPMENT BY NEW COMPANY

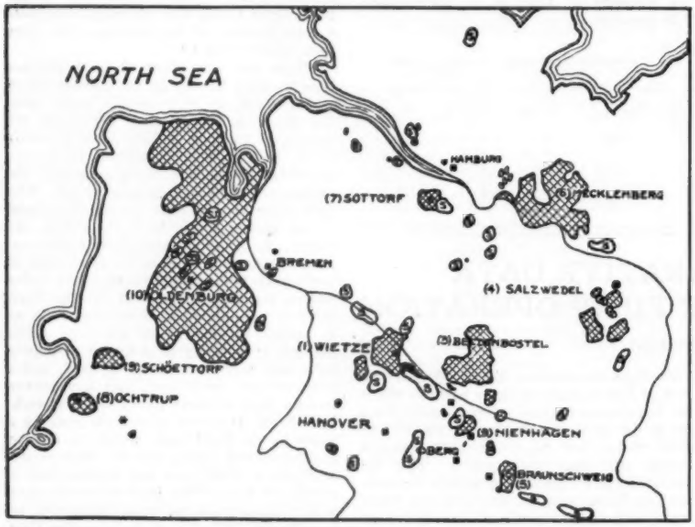
The North European Oil Corp., incorporated in 1929 under the laws of Delaware to acquire and develop oil properties in Germany and of which Sidney H. Keoughan, well known American oil man is president and managing director is the subject of an article in a recent number of the Petroleum Times, London, England, which also publishes a map of the area in which the company operates.

Germany has been a producer of oil on a small scale for many years, but recent developments indicate that the country may contain important petroleum deposits in horizons never explored in past years. During the past few months deeper drilling methods in use by American oil companies have been introduced in Germany and these have brought about the opening of new horizons of richer oil saturation than those developed in the shallower fields of the country.

German oil producers are protected by a tariff wall of over $3 per barrel which would make it hard for foreign oil to compete if sufficient oil can be produced in Germany to meet the country's requirements. Official figures on imports of petroleum products into Germany give 22,000,000 bbls. per annum as the total and while Germany's production of crude oil last year showed an increase of 60 per cent over the 1929 production it represented only 10 per cent of the nation's requirements.

The North European Oil Corp. is the leading company in Germany in regard to holdings of acreage. It operates as a holding company, having 11 wholly owned German subsidiaries. In acquiring certain old companies the corporation not only gained valuable acreage and geological information, but also important private and governmental affiliations in Germany. Today its leases and concessions total almost 1,600,000 acres, most of which are solidly blocked. Ownerships, however, in the district of Hanover are in the main very small parcels of land, the growing excitement in the acquisition of oil acreage having made blocking of lands practically impossible.

The corporation has now over 14,000 separate parcels of land under lease; it has had the advantage of being ahead of any competitors in the acquisition of almost the only solid land blocks possible to assemble in the salt dome area. As a consequence it will not be subject to offset drilling or forced by competitors to develop its acreage in the uneconomic manner which so frequently applies in the United States. Its policy is to use all up to date scientific methods of locating oil and gas as the foundation of a large completely integrated oil company.



Map shows the immense holdings of the North European Oil Corp. in northern Germany.

The president and managing director of the corporation is Sidney H. Keoughan, formerly president of the Continental Oil Co.

Directors of Company

The board of directors of the corporation has as its chairman Count L. A. G. Dru, of Berlin, who is also president of the American Potash & Chemical Corp., while its vice presidents are F. Y. Robertson, New York, and Chester Narramore, of Berlin, formerly chief of the petroleum division, United States Bureau of Mines. The other directors are Byron E. Hepler, New York; Cecil Page, New York; Philip W. Russell, New York; and F. de C. Sullivan, of New York. The corporation's resident geologist is Karl F. Hasselmann, formerly associated with the Standard Oil Co. of California.

The capitalization of the corporation is 4,000,000 shares of common stock of no par value of which 1,185,291 are outstanding. There is no preferred stock, nor are there any bonds. As to its holdings in acreage, the map reproduced gives a good idea of their widespread character. This acreage in round numbers is divided approximately as under: (1) Wietze-Hope, 18,000 acres; (2) Nienhagen, 11,200 acres; (3) Beedenbostel, 23,000 acres; (4) Salzwedel, 18,000 acres; (5) Braunschweig, 22,500 acres; (6) Mecklenburg, 71,000 acres; (7) Sottorf-Hamburg, 10,000 acres; (8) Ochtrup, 12,000 acres; (9) Schiettorf, 8,000 acres; and (10) the State of Oldenburg, 1,400,000 acres. The figures in brackets denote the various areas as given on the map. The Oldenburg concession is some 90 miles long and from 20 to 40 miles wide, being situated in the heart of the salt dome basin. This property is a complete cross section of geologic conditions within what is regarded as the most favorable area from the mountains to the sea.

Uses Geophysics

Today the corporation operates six torsion balances and one magnetometer under the direction of Doctor Kaselitz, who introduced the torsion balance to the United States and for six years was head of the torsion balance work of the Gulf Oil Corp. in the United States.

As to definite development work, the corporation at present has two strings of drilling tools in operation—one commencing the first test on the Jaderburg structure in Oldenburg (10) and the second in the Braunschweig structure (5). A third drilling outfit was operated for the corporation by the Preussusche Bergwerke und Hutten A.-G. ("Preussag."), owned by the Prussian government, with which the North European Oil Corp. has contracted for the drilling of several wells. The first well is said to have been abandoned at about 3,250 feet. It was located at Nienhagen (2).

POSSIBLE PRODUCING SECTIONS IN CANADA

A rather promising area in southwestern British Columbia is the Sumas Prairie and New Westminster district where drilling operations on a small scale have been carried on for about five years. Oil showings in the form of small seepages have been known for many years. About five years ago the Sumas Oil & Gas Co. of New Westminster put down a preliminary shallow test with an ordinary water well rig and 90 feet of 2-inch piping. This test encountered gas showings and was eventually carried to about 500 feet. There was a blowout in this well and it was abandoned, except that a metal drum was fitted over the top of the well and a half-inch pipe connected with a gas burner on an adjacent farm property, where the gas has ever since been in use.

This showing encountered the starting of a commercial test, Sumas Oil & Gas Co.'s No. 1, in Lot 26, Group 2, New Westminster district, Township 19. This hole was ultimately carried to about 900 feet but met with considerable trouble on account of the formation, as a result of which the size of the casing was reduced to where it was considered impracticable to go deeper. No. 1 encountered considerable gas at 180 feet, and later at 550 feet, but no production test was made owing to drilling difficulties. The test was abandoned and plugged, though some gas is still coming to the surface through mud and water.

Sumas' No. 2 was carried to 868 feet. Some gas was met at the same 180-foot horizon, approximating a small commercial production. Below this depth the outfit was changed from standard to rotary. Some gas was met at 550 feet but it is now thought the rotary mud shut off a portion of the potential production; the test later ran into drilling difficulties and owing to general financial conditions was temporarily shut down. The company expects to resume as soon as conditions improve.

In the meantime, an agreement has been made with Gas Development B. C., Ltd., of Vancouver, for the drilling of three wells to depths of not less than 600 feet on the Sumas Oil & Gas Co. holdings, with a view to adequately testing these for gas. Operations will be commenced in the near future. It is understood the Merger Oil & Gas Co., a United States concern, is interested in Gas Development B. C., Ltd.

International Pipe Lines, Ltd., of Vancouver, which has been operating on Lulu Island, near Steveston, has rigged up a test, known as International Pipe Lines' No. 3, on Lot 222, Group 2, Sumas Prairie, adjacent to the Sumas Prairie Oil & Gas Co.'s holdings. This test, which is closer to the mountains, is down about 200 feet but is reported to have run into something like a granite formation, possibly an intrusion, and has not yet drilled through this. International Pipe Lines, Ltd., is planning operations on an extensive scale, having secured agreements covering gas and oil rights of other leaseholders and property holders; and has also arranged with the British Columbia Electric Railway Co. for the use of the railway right of way for a pipe line from Sumas Prairie to New Westminster and Vancouver.

James Bay Possibilities

As a result of drilling carried on by the Ontario government in the lignite area on the James Bay slope in northern Ontario, it is stated possibilities of oil and gas in this area are indicated. Extensive deposits of lignite have been proven in a large basin formed by an irregularity in the underlying basic rocks, permitting an accumulation of clay and vegetation over a period of ages which, protected from erosion, has formed a certain area of cretaceous formation favorable to coal, oil and gas. One hole drilled for exploratory purposes did not enter the basic granite till a depth of 1,000 feet. Below the lignite beds, the drilling indicated various strata of shale and limestone the porous quality of which suggested possibilities of oil accumulation.

The basin in which the lignite has been found is at least 5 miles across while its length has not yet been determined. Similar basins on portions of the James Bay slope not yet explored are regarded as possible. The government has been carrying on its drilling operations for less than two years. Smith & Travers have sent a third drilling outfit from Sudbury to the field to take part in the drilling program for the coming summer.

Atlantic Keystone Operations

Atlantic Keystone Petroleums of Canada, Ltd., of Vancouver, British Columbia, is reported preparing for active work on some of its Alberta holdings this spring. Officers are: President, Col. Frank Wilbur Smith, New York; vice president and managing director, Frank L. Buckley, Vancouver; production manager, Thomas A. Collins, Vancouver; counsel, J. W. Heffernan, Edmonton.

Late Fields

(Continued from Page 32)

Saturday, April 18, the production was 188,701 bbls. Sunday's was 161,040 bbls. Monday's was 123,815 bbls., and Tuesday, April 21, the field made 142,700 bbls.

Boucher Oil Co.'s No. 1 Godwin, NE cor. SW, Section 32-26-1w, a wildcat, northeast of Tonkawa, in Kay County, was drilling in the Viola lime at 4,504 feet. The top of the Viola was found at 4,500 feet. The test is expected to reach the Wilcox sand in a few days.

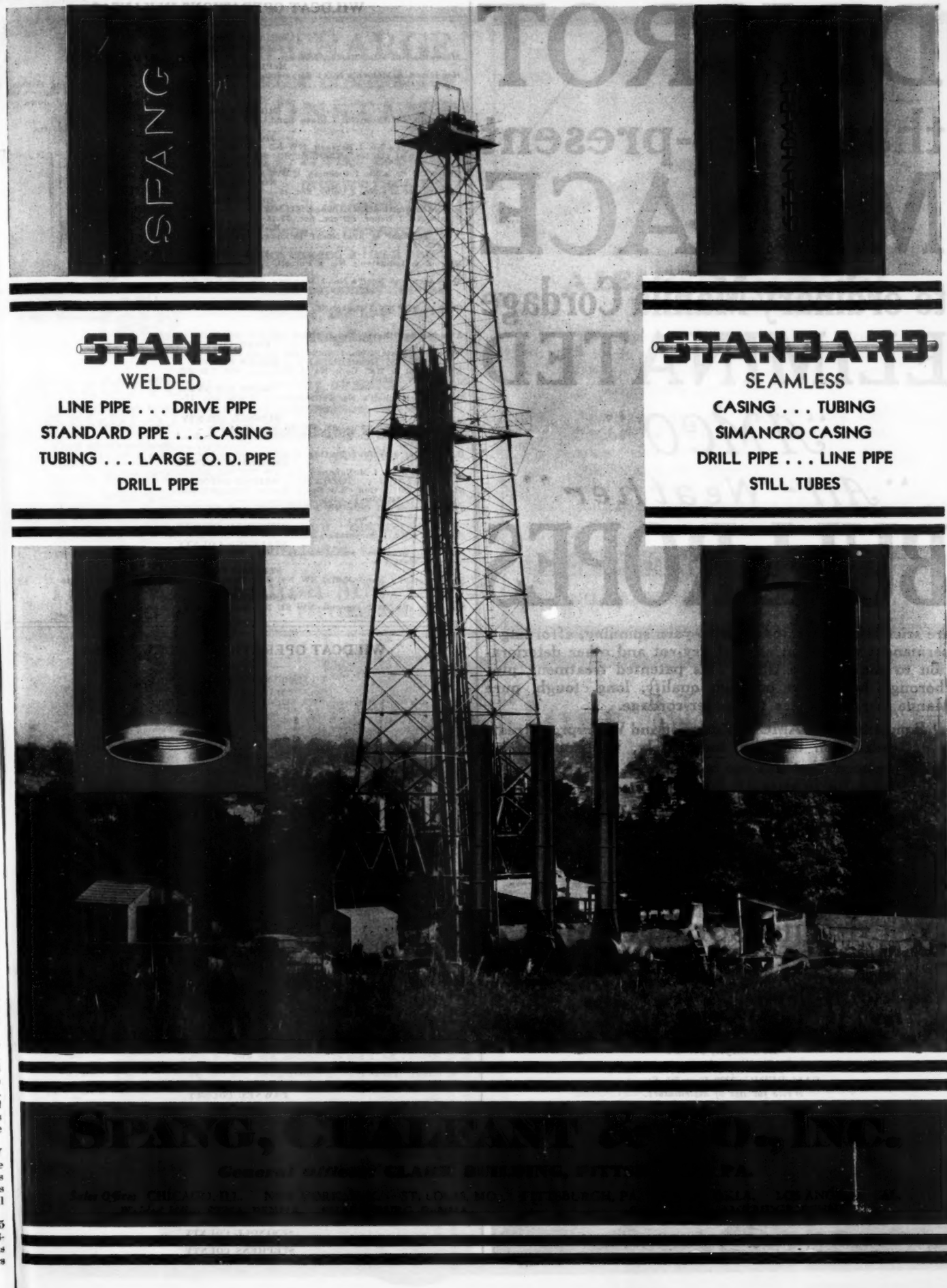
The sixth well was completed on the discovery lease in the Wanette Pool. Payne Drilling Co.'s No. 6 Bullock, NE cor. SW NE, Section 22-6-3, in southern Pottawatomie County, flowed 1,123 bbls. of oil in 24 hours from the regular sand at 3,587-3,600 feet. It is located across 40 acres from the discovery well in the area.

J. A. Hull Co.'s No. 2 Townsend, NW cor. SE SE, Section 22-6-3, in Wanette Pool, flowed 310 bbls. of oil in 10 hours after a 10-quart shot. The sand was found from 3,530-47 feet and the total depth 3,557 feet.

Mid-Kansas Oil & Gas Co.'s No. 5 Davis, NW cor. SE NW, Section 30-8-8, in the Wewoka townsite pool, was completed for 925 bbls. of oil in 24 hours and 10,000,000 feet of gas.

SUMMARY OF STATEMENTS MADE APRIL 10, 1931, RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING MARCH 31, 1931

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat Transit	745,113.23	137,918.13	857,225.63	565,089.04	510,700.41
S W Pa. P. L.	369,482.29	73,145.44	826,137.12	423,661.54	537,037.87
Eureka P. L.	1,819,344.51	294,873.88	481,268.90	328,329.66	229,095.98
Buckeye P. L. (Macksburg)	565,767.95	311,712.85	114,114.00	265,351.57	188,440.73
Buckeye P. L. (Lima, etc.)	3,619,980.13	79,000.44	1,930,013.59	1,601,658.90	1,099,041.00
Buckeye P. L. (Cleveland)	49,352.24	11,769.49	185,274.45	2,440.89	182,991.02
Indiana P. L.	611,627.34	2,199.09	1,022,463.80	737,337.17	223,622.83
Cumberland P. L.	652,425.69	168,106.26	145.62	110,949.07	53,117.30
Southern P. L.	270,576.36	.....	78,741.77	79,090.42	52,717.86
Bradford Trans.	143,165.00	307,597.03	.....	342,249.76	.....
N. Y. Transit	148,015.40	28,392.78	190,081.90	187,287.69	3,415.06
Northern Pipe	343,320.93	.....	535,395.52	177,499.13	339,504.58
Tide Water Pipe	1,030,157.40	24,005.40	.....	362,962.53	.....
Tuscarora Dev.	13,347.56	.....	.....	443,677.56	.....
Total March	10,381,684.03	1,439,720.79	6,220,862.30	5,626,584.93	3,419,685.24
Total February	10,856,629.60	1,329,911.87	5,683,416.02	4,999,343.68	3,071,528.20
Difference	474,945.57	109,808.92	537,446.28	627,241.25	348,157.04


SPANG
STANDARD
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WELDED
LINE PIPE . . . DRIVE PIPE
STANDARD PIPE . . . CASING
TUBING . . . LARGE O. D. PIPE
DRILL PIPE
STANDARD
SEAMLESS
CASING . . . TUBING
SIMANCRO CASING
DRILL PIPE . . . LINE PIPE
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that ever-present
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BULL ROPES

are scientifically treated prior to yarn spinning, affording a permanent protection against dry-rot and other deterioration to each minute fibre. This patented treatment, plus thorough lubrication on high quality, long, tough, pure Manila fibre, produces this super-cordage.

Remember the "AMCO" Rotproof and Waterproof treatment remains on the rope indefinitely. We know of no other treatment that this can be said of.

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"AMCO" "ALL-WEATHER" Manila Cordage is also furnished in Cat lines three or four strands, Spinning lines and Cable for soft rope. It's the rope always wrapped in green burlap.

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Tulsa Representative:
SAM REDIC, 2220 East 7th Street
Write for list of distributors.

WILDCAT OPERATIONS IN KANSAS

(Continued from Page 34)

MARION COUNTY

Midwell's No. 1 La Master, NW cor. Sec. 31-22-4 .....Shut down 650 ft.

McPHERSON COUNTY

Henderson & Holden's No. 1 Sommerfield, NE NW Sec. 23-19-1w .....Drlg. 2,954 ft.; showing 25 bbls. of oil and 50 bbls. of water a day; T. D. 3,313 ft.; shut down.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 32-34-43w .....Fishing 5-in. csg. 3,460 ft.

MORRIS COUNTY

Urschel et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7 ..Machine.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9 ....Shut down 900 ft.

NESS COUNTY

Gypsy Oil Co.'s No. 1 Coleman, C SW NE Sec. 25-17-25w..Drlg. 4,400 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w .....Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-16 ....Shut down 1,525 ft.
Fields' No. 1 Usker, SE cor. Sec. 25-16-17 .....Shut down 400 ft.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Unknown, SW cor. Sec. 3-2-35w .....Shut down 2,700 ft.

RICE COUNTY

Detrick & Langston's No. 1 Purcell, NW cor. Sec. 33-19-9w .....Spudding.
McFadden and Shell's No. 1 Jennings, SW NE NW Sec. 29-18-6w .....T. D. 1,450 ft.; plugging back to 1,130 ft.
Cress et al's No. 1 Sharp, SE NE Sec. 13-20-10w .....Show of 3,107-15 ft.; Silicious 3,-330-36 ft.; estimated 1,500 bbls.; shut in.
Allison-Fitzwilliams' No. 1 Blake, NE NW Sec. 9-18-10w..Rig.

RENO COUNTY

Shell Continental's No. 1 Blake, SW SE SE Sec. 23-23-4w..Drlg. 2,980 ft.

ROOKS COUNTY

Empire Oil & Ref. Co.'s No. 1 Halsman, SW NE SE Sec. 17-7-20w .....Drlg. 2,545 ft.

RUSH COUNTY

Dewey & Mitchell's No. 1 Greenawalt, C SW Sec. 17-19-16w .....Shut down 1,700 ft.

RUSSELL COUNTY

Hall et al's No. 1 Mills, SE SW SE Sec. 30-14-13w .....Drlg. 1,060 ft.
Agate Oil & Gas Co.'s No. 1 Rochfeflow, SE cor. Sec. 6-13-12w .....Shut down 3,374 ft.
Gilbreath et al's No. 1 Bratton, C NE Sec. 33-11-13w ....Shut down 2,814 ft.

SEDGWICK COUNTY

Buck et al's No. 1 McNananan, NE NW NW Sec. 2-29-1..Drlg. 2,301 ft.

SALINE COUNTY

Stanolind Oil & Gas Co.'s No. 1 Martin Com., NE SE SE Sec. 2-16-3w .....Drlg. 1,345 ft.
Twin Mounds Oil Co.'s No. 1 Weis, C W half NE NW Sec. 20-13-4w .....Shut down 2,700 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW SW Sec. 27-7-26w ..Shut down 1,180 ft.

STAFFORD COUNTY

Rosenthal, Stanolind and Amerada's No. 1 Gray, C NE Sec. 11-24-13w .....Rig.

STEVENS COUNTY

Sidwell et al's No. 1 Kelly, SW NE Sec. 16-34-38w ....Completed 2,678-2,862 ft.; 3,000,-000 ft. gas.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3 ....Shut down 1,720 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 36)

HASKELL COUNTY

Ault et al's No. 1 Harrison, CWL SE NE Sec. 14-9-19 ....Shut down 650 ft.
Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19 .....Shut down 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-9-19 .....Shut down 50 ft.
Finefield's No. 1 Ogle, NW cor. Sec. 6-7-20 .....Fishing 600 ft.
Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e .....Shut down 1,860 ft.
Marion Oil's No. 1 Sanders, NW NE NW Sec. 10-9-18e ..Shut down 2,387 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Shut down 1,645 ft.

KAY COUNTY

Wilwright Gas Co.'s No. 1 Wildegrube, NE SW Sec. 14-27-1 .....Drlg. 4,050 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1 .....Location.
Peters & Buckles' No. 1 Hayes, NW NE NW Sec. 24-28-3 .....Shut down 3,247 ft.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2 .....Shut down 3,575 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w .....Rig on ground.
Boucher Oil Co.'s No. 1 Jefferson, NE SW Sec. 32-26-1w..Fishing 4,465 ft.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-15w .....Rig.

LATIMER COUNTY

Choctaw Gas' No. 1 Weaver, C NE NW Sec. 4-6-18 .....Shut down 3,475 ft.
P. English's No. 1 Unknown, NW SE Sec. 16-6-19 .....Drlg. 1,250 ft.
Lefiore Oil Co.'s No. 1 McBee, NW cor. Sec. 3-7-21 .....Shut down 3,601 ft.

LINCOLN COUNTY

Mote-Wheeler's No. 1 Stafford, NW NE Sec. 32-17-4 ....Drlg. 4,215 ft.

McINTOSH COUNTY

Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Fishing 5,687 ft.

MUSKOGEE COUNTY

I. T. I. O.'s No. 1 Unknown, C SW NE Sec. 33-11-21 ....Shut down 50 ft.
Rebold's No. 1 Miller, SE NE NE Sec. 32-13-19 .....Rig.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ....Shut down 1,011 ft.

OKFUSKEE COUNTY

E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Shut down 3,690 ft.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w .....Shut down 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w .....Shut down 5,515 ft.
J. F. Cuniff, trustee's No. 1 Church Land, NE NW SE Sec. 17-12-4w .....Shut down 6,700 ft.

PAWNEE COUNTY

Rookstool's No. 1 Wylie, NW NE SW Sec. 6-20-5 .....Shut down 1,950 ft.
Sperry et al's No. 1 Mullrap, SE SW Sec. 2-22-5 .....Shut down 1,740 ft.
Cochran et al's No. 1 Green, NE cor. SW Sec. 15-23-5 ....Rig.

PITTSBURG COUNTY

Vincent et al's No. 1 U. S. Coal Land, NW SE Sec. 9-5-14 .....Shut down 100 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 .....Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 .....Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 .....Rig.

POTTAWATOMIE COUNTY

Droppleman et al's No. 1 Jones, SE NW Sec. 21-8-2 ....Drlg. 3,430 ft.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w .....Drlg. 3,825 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Fishing 2,956 ft.

SEMINOLE COUNTY

Sunray Oil Co.'s No. 1 Sunray, NW SE Sec. 35-5-5 .....Location.

STEPHENS COUNTY

Ross Southerd's No. 1 McKinney, NE cor. Sec. 25-1-5w ..Shut down 1,062 ft.

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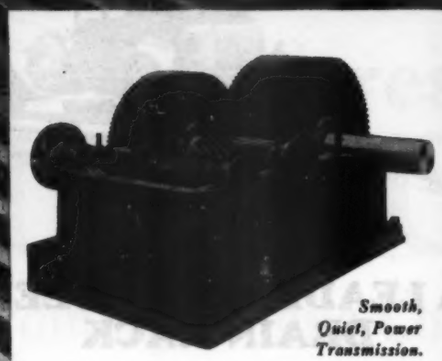

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WASHITA COUNTY

Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w..Drlg. 1,760 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 .....Drlg. 400 ft.
Petroleum Holdings, Inc.'s No. 1 Music, NW cor. Sec. 10-9-20w .....Shut down 230 ft.

WOODWARD COUNTY

Prairie Oil & Gas Co. et al's No. 1 Wilbur, NE cor. NW Sec. 22-23-17w .....Shut down 7,445 ft.

OKLAHOMA PANHANDLE

TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1B..Drlg. 4,625 ft.
Palo Alto Oil Co.'s No. 1 Graves, NE SW SW Sec. 23-2-1Se .....Spudded; shut down.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Stewart-Howland's No. 1 Howard, NW SE NW Sec. 6-4s-11 .....Shut down 100 ft.
Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 .....Shut down 400 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10..T. D. 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 .....Shut down 690 ft.
Johnson et al's No. 1 Ussery, SE SW SE Sec. 14-16s-7e ..Shut down 485 ft.

COTTON COUNTY

Gilbert-Lowery's No. 1 Harneg, C SE SE Sec. 4-2S-11w ..Shut down 2,245 ft.

JEFFERSON COUNTY

Chenault et al's No. 1 Grogan, NE SW NW Sec. 23-7s-6w .....Drlg. 1,158 ft.
Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w .....Location.
C. V. Chenault et al's No. 1 Grogan, SW NE SE Sec. 15-7s-6w .....Location.
Smith's No. 1 M. O. Carty, SE NW NE Sec. 18-4s-8w ....Drlg. 2,035 ft.

LOVE COUNTY

Autry et al's No. 1 Cross, SW NW NW Sec. 26-6-2 .....Drlg. 360 ft.
Batson & Sterrette's No. 1 Dillard, SE NE NW Sec. 25-6s-3 .....Show 5 bbls. 1,585-96 ft.; T. D. 4,433 ft.; P. B. to 1,604 ft.

MARSHALL COUNTY

McCrory et al's No. 1 Little, NW SW Sec. 30-7s-6 .....Drlg. 388-90 ft.; showing oil.
D. H. Curry's No. 1 Ward, NE SE SW Sec. 15-5s-6 .....Drlg. 1,940 ft.

STEPHENS COUNTY

Obermyer et al's No. 1 Skelton, NE SW SW Sec. 32-1S-7w .....Drlg. 1,465 ft.

WELL RECORDS ARE OF MAJOR IMPORTANCE

(Continued from Page 25)

and from then on all earnings are in the form of true profit.

In cases where the property was burdened from its completion with too great an investment as compared with the amount of production secured it may be "in the red" at all times and never have a chance to "pay out." Such a property may have had too many dry holes as compared to producing wells, may have cost too much in purchase price, may be unfavorably located on the structure, have tight sands or any other of many general unfavorable conditions.

By the system of cost keeping that takes into account the amount of oil actually produced, its sale value, the gross income and charges against that gross earning, the various costs of securing the oil, and then credits the net earning to the property makes it possible to estimate, almost at a glance over the monthly report, what properties should be continued and which ones should be abandoned.

Because the wells are making some oil is not always an indication that the lease is a paying proposition. It may be illustrated by assuming that a property of the kind that is "in the red" shows that the capital invested still exceeds the total net earning of the property by $50,000.

If a property of this kind is making $1,500 or $2,000 net each month and the lifting costs are lower than the sales price of the oil this amount can be credited to the capital account, or as is actually done, be deducted from the $50,000 or monthly balance and reimburse the operating company to that extent on its original investment.

But when such a property no longer is able to produce oil at a cost that is less than the sales price of the oil and gas recovered it is obvious that it is no longer profitable to operate it regardless of what a depletion curve might indicate.

Consolidation Necessary

When a condition of the kind cited above exists it may be found that it is possible to consolidate this deficient property with the properties of neighboring operators and by forming a large number of wells into one group and placing the newly formed unit under one operator, and perhaps one power or pumping system, reduce the cost of securing the oil so as to permit the wells to be produced profitably for a longer time.

One of the best illustrations of a consolidation of this general type is the Delaware Consolidated Oil Co. near Nowata, Okla.

In 1926 four major and four minor well owners in this pool owning in all 649 wells in the pool agreed to enter into this consolidation.

In an article published in the January 8 issue of The Oil and Gas Journal, J. O. Lewis, petroleum engineer of the firm of Dunn & Lewis, Tulsa, stated that there were still 359 actively producing wells with an average depth of 1,000 feet and making 1½ bbls. per day average production and 290 wells that were inactive.

The production expenses of the Delaware Consolidated Oil Co. was averaging about 40 cents per barrel at that time including every expense but depreciation, depletion and federal income taxes. Included in this cost was all overhead expenses and also money spent in keeping the property in first-class condition and purchasing new equipment as needed. This policy of maintaining the equipment in good condition has been reflected in the further reduction in lifting costs as reported April 1.

Mr. Lewis stated that on this later date the lifting cost for this oil was 16 cents per barrel and the general expenses 8 cents, or a total of 24 cents, which still covers money that is being spent to keep the properties in first-class condition so that future production costs will continue to be low.

Mr. Lewis' article says: "Depreciation and depletion against the values of the properties when taken over five years ago can be considered as a bookkeeping fiction but depreciation should be charged against the improvements since made that have been charged to investment. This is estimated at an additional 10 cents per net barrel."

This added to the April lifting cost makes the total production expense 34 cents per barrel compared with 41 cents for development cost and a production expense of 51 cents, or a total of 92 cents per net barrel in the Seminole City Pool is "a very favorable showing, and emphasizes the need of giving special attention to these old wells.

It is reported that 38 wells in the Deaner Pool in Section 16-11-11 making 87 bbls. of production in 1929 changed ownership and after 16 were pulled, plugged and abandoned the remaining 22 wells are now making about 350 bbls. of oil daily. Of these 22 wells 12 are still to be further cleaned and repaired and it is hoped that by so doing the production will be still further increased. It is stated that in pulling and abandoning the 16 wells reported above about $40,000 worth of pipe and material was reclaimed.

Further Uses for Records

When the leases now forming the Delaware Consolidated Oil Co. were first taken over it was found that over 200

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wells could be pulled, plugged and abandoned to good advantage and much of the material secured in this way used in repairing other wells that were to be produced. At present about 290 of the original 649 drilled wells are not pumping. Some of the wells drilled were dry, but to offset this it has been found that some wells for a time abandoned have since been repaired so that there are now more active wells in the pool than there were when it was consolidated.

This shows the value of well records and also the saving that can be effected if careful track is kept of all material on the lease.

One case is reported where a major company using a complete checking system has been able to secure thousands of dollars worth of equipment from abandoned wells, which is repaired and used on wells that are still producing. This lowers the cost of producing oil and where a company can make money by following such a practice it is in position to make investments elsewhere.

It does seem that this is one type of field where the equipment manufacturers are overlooking good possibilities of sales during this period of depression. Any type of equipment that will lower production costs should prove of interest to the producing companies, and, while the sales resistance at this time is much greater than under normally good times, the fact still remains that no good executive of a producing company is going to veto the spending of money if the ultimate gain can be shown in the form of increased earnings.

Much trouble is due to the fact that the salesmen either do not have "cost reducing" equipment for old leases and small wells, or they are not themselves familiar enough with the operations of the producing company to offer constructive suggestions in ways and means of reducing operating costs.

In the case of the Delaware Consolidated Oil Co. it was stated that the production cost of 24 cents included "money invested in new equipment" to keep the lease and wells in first-class condition.

In most old fields and lease tanks are the remains of the flush production days and many of them wooden and the United States Bureau of Mines has so completely demonstrated the heavy losses that occur in handling production from old wells in other than closed tanks that this one item alone should offer a field of relative large volume to tank manufacturers.

Rod lines, powers, engines, sucker rods, pulling and clean-out equipment, working barrels, standing valves and a great deal other equipment is needed for these old leases and if a careful survey is made it can be demonstrated to many of the smaller operators where relatively small investments in new equipment now will place their properties again on a paying basis.

This condition also warrants the owners of these small leases considering employing competent engineers who have had previous experience in production work with some of the major companies. Many such men are now available and to allow them to drift into other industries after years of training and experience in the petroleum industry seems regrettable when their talent might be so well and profitably employed in helping out in the solution of the problems involved in keeping the thousands of old wells operative and profitable.

Rod line from central pumping power house to wells in the Nowata district, Oklahoma.

Low Commodity Costs Favorable

It has been pointed out that in other industries many of the larger companies and corporations have come out of consolidations of numerous small properties during times of depressions in those industries such as is now visited upon the oil industry.

With the low prices now prevailing for all commodities and using capable men to the best advantage so that their productive power will be increased, it would seem that this is an opportune time for the salvaging of many old properties and placing them upon a permanent paying basis.

All such consolidations will require records upon which to base the relative values of the properties, but in most cases the desire to complete negotiations is probably of more importance than anything else, for to put through any consolidation deal will require much of the "give and take" type of negotiation, but in many districts such grouping of properties is going to be very essential if the maximum amount of oil is to be recovered from the wells and these old fields conserved.

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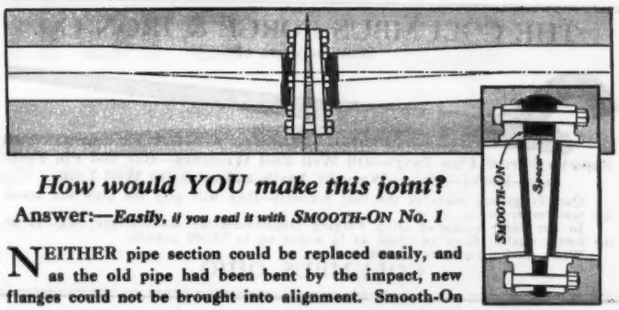

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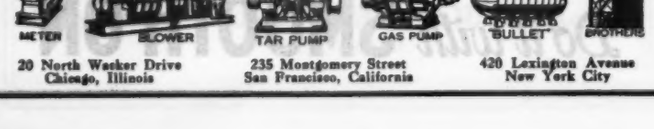

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	1930	1931	1930	1931
Petroleum, crude ..... Bbls.	1,730,519	1,710,296	3,538,446	3,629,156
Petroleum, crude ..... $	2,346,127	1,794,902	4,832,316	4,023,059
Total refined petroleum ..... Bbls.	9,400,336	7,320,163	20,561,365	16,677,956
Total refined petroleum ..... $	36,778,490	20,785,798	78,752,909	46,615,620
Gasoline, naphtha and other light products ..... Bbls.	4,835,064	3,586,221	10,131,423	8,248,445
Gasoline, naphtha and other light products ..... $	20,782,232	10,604,224	43,914,147	24,368,834
Oils, illuminating ..... Bbls.	1,197,974	974,299	3,135,511	2,349,467
Oils, illuminating ..... $	5,326,573	3,092,359	12,852,806	6,531,717
Gas and fuel ..... Bbls.	2,498,729	2,204,014	5,519,298	4,928,601
Gas and fuel ..... $	2,646,693	1,967,629	5,624,730	4,499,195
Lubricating ..... Bbls.	857,723	547,738	1,749,849	1,223,919
Lubricating ..... $	7,878,064	5,017,997	16,026,589	10,984,302
Other refined petroleum ..... Bbls.	10,846	7,791	25,184	17,534
Other refined petroleum ..... $	144,927	103,589	334,637	231,566
Paraffin wax ..... Lbs.	18,766,123	23,502,544	51,218,661	45,563,022
Paraffin wax ..... $	748,719	722,313	2,040,152	1,414,187

STARTING WILDCAT TEST IN SOUTHWEST IOWA

The Muscatine Oil & Gas Co. is starting a test for oil in Fruitland Township, 76n-2w, Muscatine County, Iowa, according to the report of the Muscatine Journal. The test is located on the Titus-Merrill land, in the southeastern part of the State, on what is known as the Muscatine Island. The drilling was started when the test was spudded a few days ago, which was witnessed by P. W. Lanier, president of the Muscatine Oil & Gas Co., and A. L. Jarvis, also connected with the company.

The greater part of the surface of Iowa is composed of what is known as Glacial drift, brought down from more northern regions by glacial action and left on the surface when the glaciers receded. It is believed the area surrounding the test the Mississippian beds underlie that part of the State. Muscatine Island was formed by the Mississippi River.

Several gas showings have been found in the State but none have been considered commercial, as the gas has been found in the detrital drift. Tests have been drilled in the State to a depth of 2,200 feet where fresh water was found and used to supply towns, the water being found in the St. Peter sandstone.

CENTRAL WEST FIELDS

(Continued from Page 63)

completed in the Mississippian limestone at 871 feet, and showed good production.

Sullivan County — Wade Commelly is drilling a gas test on the David Holden lease, in Section 29, Haddon Township.

Vanderburg County — The Vanderburg Oil Corp. completed a 5-bbl. well in No. 2 George Hornby, in Section 32, Center Township. A third well is drilling on the same farm.

Vigo County—Thomas and Ellis got a dry hole on the W. P. Collins lease, in Section 31, Prairie Creek Township.

Drillers and operators are reminded that all logs should be sent in up to date, says Paul F. Simpson, state gas supervisor, Indianapolis. Work has started on the revision of "The Geology of the Deep Wells of Indiana," and all available records are needed to make this new report accurate and complete. Note that the log requires the accurate location, the amount of production, if any, and the elevation if known. Mimeographed blank forms for this information will be furnished on request.

Mr. Simpson also states that "a report is in press which will deal with the results of a study of the insoluble residues of the Mississippian limestone in Indiana. It includes suggestions which will enable the practical man to use the results in his work, as well as illustrations of typical residues from limestones collected in Indiana.

ILLINOIS

No completions were reported from the Illinois fields, there being but abandoned wells given, and they were in the Dupo Field of St. Clair County, southeast of East St. Louis. Cole, Esther and others pulled out No. 1 on the Iles & Krack property, Section 21, Sugar Creek Township, and the Ohio Oil Co. abandoned Nos. 8 and 13 on the Matilda Dyroff farm, Section 28, same township.

NATIONAL TRANSIT CO. FILES NEW LOCAL RATES

OIL CITY, Pa., Apr. 18.—Announcement is made by the National Transit Co. of the filing of new local tariffs with the Interstate Commerce Commission and the Pennsylvania Public Service Commission, effective May 15, 1931, naming lower rates for the transportation of crude petroleum from certain points in Pennsylvania to other points in the State reached by the Transit system.

These tariffs will permit a new method of handling crude oil within the area served by the National Transit Co. pipe lines, which is a radical departure from that in effect under the old tariffs. The new rates named show a reduction of from 2 to 5 cents per barrel, and the purpose of the arrangement is to provide a better service for both the producer and the refiner and allow the crude oil to be refined in the immediate territory in which it is produced. It is assumed that these reductions in rates will be passed on to the producer, as was done heretofore, when other rate reductions were made by the National Transit Co.

Under the new arrangement a lower rate is granted for a short haul than for a long haul, tending to encourage the refining of crude oil in the locality produced.

It has been customary throughout this territory when pipe line charges are reduced for the refiner to pass this saving along to the producer, thus allowing the producer more money for his oil and resulting in the refiner paying the same amount as previously. A refinery in the Butler district has already announced its intention of passing the saving along to the producer.

The new tariff lists a scale showing the charges between points on the Transit system, graduated according to distance of the haul.

LEGAL

Sale of oil and gas leases. Department of the Interior, United States Land Office, Las Cruces, New Mexico. Notice is hereby given that the following described land in Eddy County, New Mexico, is offered for lease under Section 17 of the act of February 25, 1920 (41 Stat. 437), at the customary royalty schedule in the standard lease form, and subject to the following conditions: 1. Unit No. 1: T. 18 S., R. 27 E., N.M.P.M.—Sec. 8, NE¼, NE¼ NW¼—200 acres. 2. The lessee shall agree to unite with others in adopting and operating under a cooperative or unit plan of development or operation of said field whenever determined and certified by the Secretary of the Interior to be necessary or advisable in the public interest, and 3. The lessor contents that, if the oil and gas resources of said land can be recovered adequately by means of wells drilled, or to be drilled on adjacent lands, in lieu of drilling and producing wells on the leasehold, the lessee may pay a sum estimated to reimburse the United States for current loss of royalty, such sum, unless determined under a cooperative or unit plan of operation approved by the Secretary of the Interior, to be fixed monthly by the supervisor of oil and gas operations, subject to approval by the Secretary of the Interior whose decision shall be final. Said lease will be offered for sale at public auction in the United States Land Office, Las Cruces, New Mexico, at 10 O'clock A.M. on May 23, 1931, to the highest qualified bidder on the terms specified. The successful bidder must deposit on the date of sale with the officer in charge of the sale, a certified check on a solvent bank, or cash, for one-fifth of the amount bid by him and file the showing of qualifications to receive a lease required by Section 15 of the said regulations. Bidders are warned against violations of the provisions of Section 59, U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. (Signed) V. B. May, Register.

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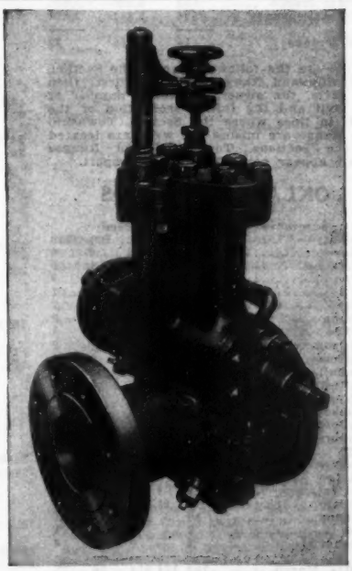

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Summary of All Fields for the Month of March, 1931

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	162	594	36	70
Central Ohio	30	290	7	16
Lima	11	135	2	8
Indiana	13	58	5	4
Michigan	5	133	1	2
Kentucky	50	627	17	17
Illinois	5	28	3	0
Missouri	1	6	1	0
Kansas	48	10,312	15	12
Oklahoma	102	174,912	36	13
North Central Texas	126	3,771	88	3
East Central Texas	91	362,421	23	1
East Texas	2	0	2	0
West Texas	31	3,939	13	1
Panhandle Texas	28	897	13	10
Gulf Coast	90	15,621	42	4
Southwest Texas	56	5,187	20	3
North Louisiana	25	1,665	17	4
Arkansas	5	390	2	1
Mississippi	2	0	2	0
Montana	5	12	1	3
Wyoming	1	0	0	1
Colorado	2	0	2	0
New Mexico	4	4,108	1	0
Total March	895	485,020	348	182
Total February	1,003	492,220	369	218
Difference	108	7,200	21	36

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Total
Eastern	58	123	181
Central Ohio	36	99	135
Lima	4	18	22
Indiana	3	53	56
Michigan	46	100	146
Kentucky	13	144	157
Missouri	0	1	1
Tennessee	0	17	17
Illinois	4	16	20
Kansas	25	137	162
Oklahoma	84	341	425
North Central Texas	32	170	202
East Central Texas	34	158	192
East Texas	15	28	43
West Texas	19	120	139
Panhandle Texas	17	65	82
Gulf Coast	15	136	151
Southwest Texas	25	184	209
North Louisiana	26	62	88
Arkansas	7	40	47
Mississippi	5	23	28
Alabama	2	3	5
Montana	12	57	69
Wyoming	9	89	98
Colorado	13	73	86
New Mexico	8	49	57
Utah	0	20	20
Total March	512	2,326	2,838
Total February	526	2,341	2,867
Difference	14	15	29

Note—In the following report the Section, Township and Range are given first; then the farm, the owner, the serial number of the well and the initial production of the well. In lines where the Section, Township and Range are missing the wells are located in the Sections, Townships and Ranges which appear next above in the report.

OKLAHOMA FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carter	3	2,903	0	0
Comanche	1	0	1	0
Cotton	1	0	1	0
Creek	13	725	7	1
Grady	2	0	0	2
Harmon	1	0	1	0
Hughes	3	0	2	1
Jefferson	1	175	1	0
Le Flore	1	0	0	1
Marshall	1	15	0	0
McIntosh	1	0	0	1
Muskogee	9	13	4	3
Okfuskee	2	40	1	0
Oklahoma	24	144,102	0	0
Okmulgee	5	0	5	0
Osage	1	0	1	0
Pittsburg	2	0	0	2
Pontotoc	1	72	0	0
Pottawatomie	5	4,516	1	0
Seminole	12	21,619	5	0
Stephens	10	725	5	1
Tulsa	2	7	0	1
Wagoner	1	0	1	0
Total March	102	174,912	36	13
Total February	106	267,310	23	19
Difference	4	92,398	14	6

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Alfalfa	0	2	2
Atoka	0	3	3
Beckham	1	6	7
Blaine	0	1	1
Bryan	0	4	4
Caddo	0	4	4
Canadian	0	1	1
Cherokee	0	1	1
Coal	0	3	3
Carter	4	7	11
Cleveland	1	2	3
Comanche	0	3	3
Cotton	0	1	1
Creek	12	29	41
Garfield	1	6	7
Grady	1	2	3
Greer	0	2	2
Grant	1	1	2
Harper	0	1	1
Hughes	0	7	7
Haskell	0	5	5
Jefferson	0	1	1
Kay	1	8	9
Kiowa	0	4	4
Lincoln	0	6	6
Latimer	0	3	3
Logan	0	3	3
McIntosh	0	1	1
Marshall	1	6	7
Muskogee	6	13	19
Noble	1	11	12
Okfuskee	1	8	9
Oklahoma	26	84	110
Okmulgee	1	13	14
Osage	6	12	18
Pawnee	1	10	11
Payne	1	5	6
Pittsburg	5	5	10
Pontotoc	2	5	7
Pottawatomie	3	8	11
Roger Mills	0	2	2
Seminole	1	19	20
Stephens	2	5	7
Tulsa	3	11	13
Washita	0	2	2
Wagoner	3	7	10
Total March	84	341	425
Total February	86	365	451
Difference	2	24	26

WELLS COMPLETED

CARTER COUNTY

24-1s-3w Eaves, C. L. Anderson 8 470
24-1s-3w Dickerson, Magnolia Pet. Co. 4 826
J. Hooks, Carter Oil Co. 2 1607

Wells completed 3
Production 2903

COMANCHE COUNTY

3-3-9w Doegal, Okla. Nat. Gas Corp. 1. dry

Wells completed 1
Dry 1

23-1s-10w Tilley, Shasta Oil Co. 1 ..... dry

Wells completed 1
Dry 1

CREEK COUNTY

24-19- 7 Strip, Fogle et al 2 ..... dry
13-19- 8 Travis, Gled Oil Co. 1 165
18-19- 9 Weaver, A. A. Bailey and Johnson 3 25
5-18-10 Snakeya, Burton & Holmes 1.. dry
30-17- 8 Miller, Prod. & Ref. Corp. 1 .. gas
7-14-10 Lewis, Dixie Drlg. Co. 1 ..... dry
13-19- 8 Lowe, J. B. Grieves 9 210
19-19- 9 Langley, F. Wood Oil Co. 1 ... dry
10-17- 8 Replogle, C. O. Buckles et al 1 dry
14-17-10 Baker, Wilcox & Whitten 1-A. dry
22-15- 8 Wayman, F. R. Billingslee 2-A 185
18-14- 9 Wilson, C. G. Tibbens O. & G. Co. 1 140
1-14-11 Perryman, Thompson Penrod 1-A ..... dry

Wells completed 13
Production 725
Dry 7
Gas 1
Gas production 4,000,000

GRADY COUNTY

24-4-8w Milner, Badgett & Cooper 1 .. gas
36-4-8w Skelly-Snodgrass, Meridian Gas Co. 1 ..... gas

Wells completed 2
Gas 2
Gas production 10,500,000

HARMON COUNTY

17-4-24w Headley, Harmon Tex Oil Co. 4 ..... dry

Wells completed 1
Dry 1

HUGHES COUNTY

20-7- 8 Scroggins, Empire O. & R. Co. et al 1 ..... dry
1-9-10 Deer, McGee Bros. 1 ..... gas
17-7- 9 Buckner, Gilcrease Oil Co. 1 .. dry

Wells completed 3
Dry 2
Gas 1
Gas production 5,500,000

JEFFERSON COUNTY

34-6s-5w Sea, O. B. Beck 6 175
24-7s-6w Graves, C. D. Chenault 1 ..... dry

Wells completed 1
Production 175
Dry 1

LE FLORE COUNTY

38-7-26 ———, Sooner O. & G. Co. 1 .. gas

Wells completed 1
Gas 1
Gas production 1,400,000

McINTOSH COUNTY

10-11-15 Eckols, J. S. Routt et al 1 .... gas

Wells completed 1
Gas 1
Gas production 4,000,000

MUSKOGEE COUNTY

28-16-15 M. Hawkins, John Aggas 6 .. gas
9-15-18 L. Mackey, D. L. T. Oil Co. et al 2 5
18-13-16 Brown, Robinson Oil Co. 1 ... 3
16-15-15 D. Tucker, Taylor & Geiger 5. gas
14-15-15 E. Ware, P. Boyle et al 2 .... dry
7-15-17 J. Jacobs, C. D. Bradley 1 .... dry
6-14-19 Crittenden, W. J. Metzger et al 8 ..... dry
17-13-16 Collins, Braman Oil Co. 1 .... dry
Jackson, Braman Oil Co. 2 ... gas

Wells completed 9
Production 13
Dry 4
Gas 3
Gas production 4,729,800

MARSHALL COUNTY

36-5s-6 Coatsworth, Magnolia Pet. Co. 2 15

Wells completed 1
Production 15

OKFUSKEE COUNTY

21-12-11 Jacobs, Sheldon & Staples 2.. 40
9-12-11 Alexander, J. L. Selby 5 ..... dry

Wells completed 2
Production 40
Dry 1

OKLAHOMA COUNTY

24-12-3w Whitfield, T. B. Slick est. 1 ..... [17]938
Mead Addition, Sunray Oil Corp. 1 ..... [20]321
3-11-3w Refinery-site, Empire O. & R. Co. 1 ..... [8]707
10-11-3w Sandless Community, Anderson & Prichard and Phillips Pet. ..... [6]932
Terrace Lawn, I. T. L. O. et al 1 ..... [6]193
Viewpoint, I. T. L. O. et al 2 ..... [5]664
Blasier, Phillips Pet. Co. 1. [8]227
Nunn, Phillips Pet. Co. 1... [11]001
36-11-3w School Land No. 67, Sinclair O. & G. Co. 7 213
35-12-3w Garr-Page, Blackwell O. & G. and Jones Drlg. Co. 1 [2]924
10-11-3w Foote, Johnson & Dabiney 1 [8]490
Short, H. H. Patton and H. F. Wilcox O. & G. Co. 1 [2]175
14-11-3w Hugh Trosper, I. T. L. O. et al 7 ..... [4]18
2-11-3w Gibbons, Anderson & Prichard 4 ..... [1]362
10-11-3w Bouldinghouse, Phillips Pet. Co. 1 ..... [9]011
15-11-3w Lively, Eason Oil Co. et al 1 ..... [1]964
3-11-3w Crean, Phillips Pet. Co. and Hall & Briscoe 1 ..... [5]205
Damewood, Phillips Pet. Co. 1 ..... [8]982
10-11-3w Hatfield, Denver P. & R. Co. and Plains Pet. Co. 1 ... [8]545
Eckroat, Franco-Dominion, Ltd. 1 ..... [6]314
Winstead, Phillips Pet. Co. 1 ..... [3]697
Blevins, T. B. Slick est. 1.. [6]195
11-11-3w Lemmon, I. T. L. O. et al 3 [2]408
23-11-3w Ferguson, I. T. L. O. et al 1. [1]216

Wells completed 24
Production 144,102

[14] hours; [27½] hours; [8] hours; [411½] hours; [620] hours.

OKMULGEE COUNTY

1-14-14 Harris, Keithly et al 3 ..... dry
19-16-14 Tiger, McDonald et al 1 ..... dry
27-13-13 S. Johnson, Laswell et al 3 ... dry
13-14-14 Rentie, Denton & Marshall 1-A dry
1-14-14 Harris, Whitcomb et al 5 .... dry

Wells completed 5
Dry 5

OSAGE COUNTY

11-24-6 The Prairie O. & G. Co. 1 ..... dry

Wells completed 1
Dry 1

PITTSBURG COUNTY

8-7-18 White, Midwestern O. & G. Co. 1 gas
14-7-18 Trekell, Midwestern O. & G. Co. 3 ..... gas

Wells completed 2
Gas 2
Gas production 44,711,000

PONTOTOC COUNTY

28-5-5 Burk, Benedum & Trees 1 72

Wells completed 1
Production 72

POTTAWATOMIE COUNTY

8-9-5 Earlsboro Townsite, Strapp & King 1 20
22-6-3 Archer, Twin State Oil Co. 4 1530
Bullock, Payne et al 5 1709
23-6-3 Horn, Gypsy Oil Co. 4 1257
2-9-4 Brown, J. E. Crosbie 1 ..... dry

Wells completed 5
Productica 4516
Dry 1

SEMINOLE COUNTY

30-8-8 Davis, Mid-Kansas O. & G. and Ramsey 4 4,407
Douglas 50 acres, Deep Rock Oil Corp. 4 10,880
Douglas 50 acres, Deep Rock Oil Corp. 5 960
Douglas 60 acres, Deep Rock Oil Corp. 3 4,820
6-5-6 J. Harjo, Mid-Continent Pet. Corp. 1 ..... dry
3-8-5 Tiger, Amerada Pet. Corp. 4.. dry
30-8-8 Robinson, J. E. Crosbie, Inc. 1 dry
2-8-5 H. Reed, Magnolia Pet. Co. 1 480
30-8-8 Townsite, Pace Pet. Co. 1 8
29-6-6 Charty, Gypsy Oil Co. 2 ..... dry
30-8-8 Douglas 10 acres, Deep Rock Oil Corp. 2 64
26-5-7 Reed, Magnolia Pet. Co. 1 ..... dry

Wells completed 12
Production 21,619
Dry 5

STEPHENS COUNTY

29-2 -8w House, Smythe et al 2 ..... dry
1-1 -7w Thompson, Junior Oil Co. 1 .. dry
3-2s-8w Rush, George Pace 5 15
21-2s-7w Watkins, George Pace 8 400
Watkins, George Pace 9 300
27-2s-7w Toney, The Texas Co. 1 10
28-2s-7w Duncan, Cooper et al 1 ..... dry
2-2s-5w Wilson, Head & Couch 1 ..... dry
15-2s-5w Hightower, Morrison et al 2 .. gas
3-3s-8w Patrick, A. L. Andree 1 ..... dry

Wells completed 10
Production 725
Dry 5
Gas 1
Gas production 17,000,000

TULSA COUNTY

7-19-14 Thompson-Cowan, McDonigal et al 1-A 7
29-19-14 McIntosh, Chandler et al 2 .. gas

Wells completed 2
Production 7
Gas 1
Gas production 2,750,000

WAGONER COUNTY

16-16-15 Ballard, F. Boyle et al 1 ..... dry

Wells completed 1
Dry 1

KANSAS FIELDS

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Butler	1	225	0	0
Cowley	2	15	1	0
Ellis	2	....	2	0
Gove	1	....	1	0
Greenwood	2	20	1	0
Harvey	4	700	3	0
Marion	1	70	0	0
McPherson	16	6,295	2	8
Morris	2	....	2	0
Reno	1	327	0	0
Russell	3	660	0	0
Saline	1	....	1	0
Sedgwick	8	1,990	2	0
Stevens	4	....	0	4
Total March	48	10,312	15	12
Total February	40	9,196	16	3
Difference	8	1,116	1	9

Summary of Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Barton	0	3	3
Bourbon	0	1	1
Butler	1	2	3
Clay	0	1	1
Coffey	0	2	2
Cowley	1	10	11
Dickenson	0	1	1
Elk	0	2	2
Ellsworth	0	5	5
Ford	0	3	3
Franklin	0	1	1
Geary	0	1	1
Greenwood	2	13	15
Graham	0	1	1
Harper	0	1	1
Harvey	2	1	3
Lyon	0	1	1
McPherson	4	43	47
Marion	4	4	4
Morris	2	2	4
Morton	0	2	2
Ness	0	1	1
Osage	0	1	1
Rawlins	0	1	1
Reno	1	2	3
Rice	3	6	9
Rooks	0	2	2
Rush	0	1	1
Russell	2	4	6
Saline	1	1	2
Sedgwick	1	8	9
Sheridan	0	1	1
Stafford	1	0	1
Stevens	1	6	7
Sumner	2	0	2
Trego	0	1	1
Washington	0	1	1
Woodson	1	1	2
Total March	25	137	162
Total February	38	142	180
Difference	13	5	18

WELLS COMPLETED

BUTLER COUNTY

6-27-4 Anderson, E. W. Marland, Inc. 2 225

Wells completed 1
Production 225

COWLEY COUNTY

21-33-3 Nelson, McKnabb & Bess 1 15
15-33-3 Watts, Reynolds & Wasson 1 .. dry

Wells completed 2
Production 15
Dry 1

ELLIS COUNTY

19-11-17w Perry, Deep Rock Oil Corp. 1 dry
13-15-16w Wadle, Jamot Brown et al 1 dry

Wells completed 2
Dry 2

GOVE COUNTY

11-12-27w Wright, Johnson and Atlantic Oil Prod. Co. 1 ..... dry

Wells completed 1
Dry 1

GREENWOOD COUNTY

19-22-12 Isthurm, Simmons et al 2 .... dry
8-25-13 Johnson, Empire O. & R. Co. et al 2 20

Wells completed 2
Production 20
Dry 1

HARVEY COUNTY

31-22-3w Cone, Cosby, Dietrich and Phillips Pet. 1 ..... dry
36-22-2w Zook, Washoma O. & G. Co. and Sheil Pet. 1 700

5-22-3w Heibert, Alco Royalty Co. et al 1 ..... dry
36-22-2w Lehman, Jones and Shell Pet Corp. 1 ..... dry

Wells completed 4
Production 700
Dry 3

MARION COUNTY

11-17-4 Riffel, Youker et al 2 70

Wells completed 1
Production 70

McPHERSON COUNTY

14-19-2w Myers "B," McPherson O. & G. Dev. Co. 1 ..... gas
15-19-2w Smith, Carey and Shell Pet. Corp. 1 212
22-19-2w Aelmore, Barnsdall Oil Co. and The Texas Co. 1 207
23-19-2w Finkle, McPherson O. & G. Dev. Co. 1 ..... gas
19-19-1w Ritz, C. B. Davis and Shell Pet. Corp. 1 660
31-19-1w Unruh, Shell Pet. Corp. and Madison 1 ..... gas
1-20-2w Miller, Lario Oil Co. and Shell Pet. Corp. 4 2796
6-20-1w Munn, Otstot et al 2 1100
45-17-3w Peel, Tidal Oil Co., Slick, Pryor & Lockhart 1 ..... dry
15-19-2w Salthouse, McPherson O. & G. Dev. 1 ..... gas
14-19-2w Giffin, W. C. McBride, Inc. 2 gas
12-20-2w Koehn, Helmerick & Payne and Shell Pet. 1 ..... dry
3-19-2w Russell, Olsen and Shell Pet. Corp. 1 ..... gas
10-19-2w Johnson, Joe Rush et al 1 .... gas
24-19-2w Boal, Lario and Shell Pet. Corp. 1 ..... gas
19-19-1w Sellers, Dister and Shell Pet. Corp. et al 1 1320

Wells completed 16
Production 6295
Dry 2
Gas 8
Gas production 78,913,000

MORRIS COUNTY

6-16-6 Scott, Urschell et al 1 ..... dry
18-16-5 Balytine, Great Basin Oil Co. 1 dry

Wells completed 2
Dry 2

RENO COUNTY

1-23-4w Houry, Study & Turner et al 1 337

Wells completed 1
Production 337

RUSSELL COUNTY

33-13-15w Mermas, Stearns & Streeter 3 285
26-15-13w Sellens "A," Signal Oil Co. et al 1 350
33-13-15w Mills, Keys Pet. Co. 13 25

Wells completed 3
Production 660

SALINE COUNTY

30-14-2w Suddendorf, Dietrich & Smoky Hill Oil Co. 1 ..... dry

Wells completed 1
Dry 1

SEDGWICK COUNTY

17-27-2 Vickers, Magnolia Pet. Co. 2 .. 350
19-27-2 Trustee, Fisher & Lauck 2 300
30-27-2 Keys, Vickers Pet. Co. et al 2 .. 300
Shaffer, Blankenship Pet. Corp. 1 440
19-27-2 Nagel, Continental Oil Co. 1 .. 180
24-28-1 Carlton, Benson et al 1 ..... dry
5-27 2 Toben, Streeter & Stearns et al 1 ..... dry
30-27-2 Keys, Vickers Pet. Co. 3 420

Wells completed 8
Production 1990
Dry 2

STEVENS COUNTY

34-32-29w Hull, Texas Interstate Pipe Line Co. et al 1 ..... gas
34-32-39w Stone, Texas Interstate Pipe Line Co. et al 1 ..... gas
32-32-38w Costly, Texas Interstate Pipe Line Co. 1 ..... gas
28-33-37w Patterson, Texas Interstate Pipe Line Co. 1 ..... gas

Wells completed 4
Gas 4
Gas production 27,711,081

NORTH CENTRAL TEXAS

NORTH CENTRAL TEXAS
SUMMARY OF FIELD OPERATIONS

County—	Comp.	Prod.	Dry	Gas
Archer	15	183	10	0
Brown	8	25	6	1
Callahan	2	0	2	0
Coleman	14	1,406	7	0
Collins	1	0	1	0
Cooke	7	419	4	0
Eastland	2	0	0	2
Erath	1	0	1	0
Jack	1	250	0	0
Palo Pinto	7	15	6	0
Shackelford	1	0	1	0
Stephens	1	0	1	0
Throckmorton	2	0	2	0
Wichita	8	107	5	0
Wilbarger	5	15	4	0
Young	51	1,351	38	0
Total March	126	3,771	88	3
Total February	143	3,650	87	3
Difference	17	121	1	5

RIGS AND WELLS DRILLING

County—	Rgs.	S.D.	Dig.	Ttl.
Archer	5	9	6	20
Brown	1	4	0	5
Callahan	1	2	3	5
Coleman	2	6	6	14
Cooke	4	4	3	11
Clay	0	3	0	3
Eastland	1	3	6	10
Erath	1	2	0	3
Jack	0	1	2	3
Palo Pinto	1	6	9	16
Shackelford	0	1	0	1
Stephens	3	0	0	3
Throckmorton	0	3	0	3
Wichita	3	2	10	15
Wilbarger	1	2	4	7
Young	5	15	25	45
Miscellaneous counties.	4	25	9	38
Total March	32	88	82	202
Total February	28	102	86	216
Difference	4	14	4	14

WELLS COMPLETED
ARCHER COUNTY

Churchwell, Easter Oil Co. & Reynolds 1 30
Hildebrand, Krahenbuhl, Hutcherson & Bruner 1 15
L. F. Wilson, E. J. Stump 1 ..... dry
Richardson, P. C., & A. A. Brashear 1. dry
Bearden, Marshall Hays 1 ..... dry
Richardson, E. B. Madden 3 ..... dry
Richardson, E. B. Madden 4 ..... dry
Davidson, Moran Drilling Co. 1 ..... dry
DeMoss, King & Hays 1 ..... dry
Falls County School Land-E, Continental Oil Co. 1 112
Morrison, Continental Oil Co., Gilliland & Rosser 1 14
Falls County School Land, Gwynn et al 1 12
Wagner Est.-C, Hunter Oil Corp. 1 ..... dry
Speer, King & Hays 1 ..... dry
Richardson-B, Long & The Texas Company 2 ..... dry

Completions 15
Production 183
Dry holes 10

BROWN COUNTY

Carmichael, W. G. Sawyer 2 ...0..... dry
Richardson, Bush & Roberts 2 ..... dry
Leach, Rynes & Engle 2 ..... *gas
Guyer, Nystel et al 2 ..... dry
Newton, Warren et al 1 25
McChristy, McGintey & Neal 1 ..... dry
Armstrong, Stratton & Gully 2 ..... dry
Dabney, Beasley et al 1 ..... dry

Completions 8
Production 25
Dry holes 6
Gas wells 1
*1,400,000 feet gas.

CALLAHAN COUNTY

Finley, Guffey et al 1 ..... dry
Snyder, John Victor 1 ..... dry

COLEMAN COUNTY

Golson, Prairie O. & G. Co. 2 105
Golson, Prairie O. & G. Co. 3 500
Golson, Arcadia Refg. Co. et al 2 150
Golson, Arcadia Refg. Co. et al 3 157
Hubbard, Capitol City O. & G. Co. 1 ... dry
Henderson, Jackson et al 1 ..... dry
J. W. Long, Kelly et al 1 ..... dry
M. T. Overall, McGahhey et al 1 ..... dry
Burkett, Arcadia Refg. Co. 1 107
Golson, Arcadia Refg. Co. et al 5 347
Thate, G. P. Mitcham 1 ..... dry
Stewardson, Anderson & Taylor-Link Oil Co. 1 40
Thate, E. L. Smith Oil Co. 1 ..... dry
Peggie Bros., Guffey Bros. 3 ..... dry

Completions 14
Production 1406
Dry holes 7

COLLIN COUNTY

McPheran, Breckenridge Oil Co. 1 ..... dry

COOKE COUNTY

Jacobs, Gose-Harvey et al 2 10
Felker, Deep Rock Oil Co. of Tulsa 1.. dry
Jacobs, W. B. Hamilton et al 3 ..... dry
Jacobs, Danciger & Staniforth 1 400
Dove, Lloyd Oil Corp. 1 ..... dry
Jacobs, T. P. Coal & Oil Co. 1 9
Koelser, Benson & Benson 1 ..... dry

Completions 7
Production 419
Dry holes 4

EASTLAND COUNTY

Stubblefield, B & B Trucking Co. 1 ....*gas
Harrell, Wilkins & Edwards 1 ..... *gas

*600,000 feet of gas.

ERATH COUNTY

J. E. Smith, Peters et al 1 ..... dry

JACK COUNTY

Clayton et al, Brazos River Gas Co. 1 .. 250

PALO PINTO COUNTY

W. J. Heath, Wickens et al 1 ..... dry
Crossland Heirs, Brazos River Gas Co. 1 dry
Thompson, Noble Lloyd et al 1 ..... dry
Jones, Guyer, Trustee, 1 ..... dry
Hart, Lone Star Gasoline Co. 1 ..... dry
Sanger, J. H. Richardson 1 ..... dry
Thomas, Texas Roy & Utility Co. 1 15

Completions 7
Production 15
Dry holes 6

SHACKELFORD COUNTY

Ackers, Goodrum et al 1 ..... dry

STEPHENS COUNTY

Henry, Lone Star Gas Co. 4 ..... dry

THROCKMORTON COUNTY

R. H. Brown-Sec. 1,610, Woodley Pet. Co. 1 ..... dry
Brockman, York et al 1 ..... dry

WICHITA COUNTY

Bickley, R. R. Clark et al 13 77
Woodard, C. R. Conyers 1 ..... dry
W. Burnett, D. C. Thomas 1 ..... dry
Waggoner, The Texas Company 394 25
Overall, R. L. Arrington 1 5
Ward & Tood, Clark Waggoner et al 4. dry
American Refg. Props., T. F. Hunter 4. dry
Woodruff, John O'Neil 1 ..... dry

Completions 8
Production 107
Dry holes 5

WILBARGER COUNTY

Waggoner-J, Phillips Pet. Co. 1 ..... dry
Waggoner-V, Phillips Pet. Co. 2 ..... dry
Waggoner-GG, Phillips Pet. Co. 4 ..... dry
Waggoner, The Texas Company 392 ... dry
Waggoner, The Texas Company 396 ... 15

Completions 5
Production 15
Dry holes 4

YOUNG COUNTY

Bullock, Ard & Deep Oil Dev. Co. 1 ... dry
Belknap Coal Co., Brazelton et al 2 .... dry
Carter et al, Cooper et al 1 ..... dry
Jeffery, W. B. Hamilton 1 ..... dry
Finch Est., W. F. Hamilton 9 50
Hunt, W. S. Langford 1 ..... dry
Dyer, Pacific-Atlantic Oil Ser. Co. 1 .. dry
Routon, Putnam Oil Co. 1 ..... dry
Ligon, Victor Swanson 1 ..... dry
Finch Est.-A, The Texas Company & McKanna 4 167
Finch Est.-A, The Texas Company & McKanna 5 125
Jeffery-B, The Texas Company & McKanna 4 ..... dry
Hennig, Vandivert et al 1 ..... dry
McBrayer, Wootten Reed 4 7
Routon-Sec. 181, Banner et al 1 ..... dry
Masonic Home, Brazelton et al 1 ..... dry
Fisher, G. B. Chandler 1 ..... dry
Jeffery, Deats Ellis 1 ..... dry
A. Furr, Deep Oil Dev. Co. 1 ..... dry
Finch Est.-C, F H E Oil Co. et al 8 ... 170
Larimore, Kleiner Riggs 6 ..... dry
E. M. Eichelberger, Maer Martin 1 ... dry
Larimore-Sec. 2,244, Mollenkoph et al 1 dry
J. B. Daniel, Nix Dale 3 85
L. Parrish, C. A. Norment 1 255
Larimore, E. R. Riggs 17 255
Morris, R. J. Watson 1 ..... dry
Weaver, Grubbs et al 2 ..... dry
Mathis, Texotus Expl. Co. 1 ..... dry
Jeffery-Sec. 51, B. C. Banner 1 ..... dry
Finch Est., Beavers et al 1 ..... dry
Belknap Coal Co., W. E. Bernhard 1 ... dry
Husted, McBest et al 1 ..... dry
Williams, McClung, Dawson et al 1 ... dry
Jeffery-Sec. 51, B. C. Banner 1 ..... dry
Finch Est., Beavers et al 1 ..... dry
Belknap Coal Co., W. E. Bernhard 1 .. dry
Husted, McBest et al 1 ..... dry
Williams, McClung, Dawson et al 1 ... dry
Boyd, C. H. Robertson 1 ..... dry
Kay et al, W. R. Stafford 1 ..... dry
Finch Est., The Texas Company Mc-Kanna 6 54
Finch Est., The Texas Company & McKanna 7 ..... dry
Terrell Est. (Sec. 255), Watson et al 1. dry
Jordan, Wootten & Reed 3 ..... dry
Jeffery-F, Alexander et al 1 ..... dry
Belknap Coal Co., John H. Kleiner 1 .. dry
Larimore, Kleiner & Riggs 7 8
Cox, Oil News Pub. Co. 1 ..... dry
Routon, Putnam Oil Co. 2 ..... dry
Tatum, E. C. Reed 1 50
Larimore, E. R. Riggs 18 240
Sanders, G. F. Taylor 1 ..... dry
Robinson, Wootten & Reed 2 ..... dry
Cox, Panhandle Refg. Co. 1 ..... *180
Steele, Panhandle Refg. Co. 1 ..... *10

Completions 51
Production 1351
Dry holes 38
*18,500,000 feet of gas.

WEST TEXAS FIELDS

SUMMARY OF FIELD OPERATIONS

County—	Comp.	Prod.	Dry	Gas
Crane	1	0	1	0
Ector	1	50	0	0
Howard	2	888	1	0
Jones	4	64	3	0
Loving	5	1,605	1	0
Mitchell	1	60	0	0
Pecos	9	641	5	1
Upton	3	306	2	0
Ward	5	325	0	0
Total March	31	3,939	13	1
Total February	48	9,268	20	0
Difference	17	5,329	7	1

RIGS AND WELLS DRILLING

County—	Rgs.	S.D.	Dig.	Ttl.
Crane	0	1	4	5
Crockett	0	0	1	1
Ector	0	1	2	3
Fisher	0	0	3	3
Glasscock	0	0	0	0
Howard	0	1	2	3
Irion	0	1	4	5
Jones	1	2	6	9
Loving	7	4	7	18
Pecos	2	4	7	13
Reagan	1	1	0	2
Upton	2	1	3	6
Ward	5	3	13	21
Winkler	0	2	1	3
Miscellaneous counties.	1	28	18	47
Total March	19	49	71	139
Total February	20	53	65	138
Difference	1	4	6	1

CRANE COUNTY

Cowden Bros. & Co., C. C. Duffey et al 1 dry

ECTOR COUNTY

B. W. McKenzie, Skelly Oil Co. & Republic Prod. Co. 1 50

HOWARD COUNTY

S. T. Eason, Group 1 Oil Corp. and Continental Oil Co. 2 888
H. Hyman-B, McGinley & Seigler 1 .... dry

Completions 2
Production 888
Dry holes 1

JONES COUNTY

King, Shaheen and Prairie 1 64
King, Union Oil Co. and Shaheen 1 ... dry
Roberts, Hart et al 1 ..... dry
Brewer, Condor Pet. Co. et al 1 ..... dry

Completions 4
Production 64
Dry holes 3

LOVING COUNTY

George B. Russell et al, Carl Cromwell and Atlantic O. P. Co. 1 282
N. F. Chapman, Miller, Burge & Healy 1 35
Wheat & Ramsey, H. W. Martin et al 1 525
W. W. Hubbard, Lockhart & Co. 6 .... dry
Reagan & McElvain, The California Co. 7 463

Completions 5
Production 1605
Dry holes 1

MITCHELL COUNTY

A. M. Bell, Lewis & Siegel 1 60

PECOS COUNTY

Myrtle Sellman-A, Mid-Kansas O. & G. Co. et al 2 ..... gas
I. G. Yates, Schelling & Slaughter 1 .. dry
J. H. Tippett, Corvette Oil Corp. 3 140
R. G. Heiner est., William & Moran 1.. dry
J. H. Tippett, Southern Oil Corp. 2 366
H. L. Kokernot, Humble O. & R. Co. 1.. dry
C. O. Wilson, Disney & Gholson 1 ..... dry
T. S. Jackson, C. L. Dittman 1 ..... dry
H. J. Eaton (Pure), L. B. Lancaster 1.. 135

Completions 9
Production 641
Dry holes 5
Gas wells 1
Gas production 2,000,000

UPTON COUNTY

J. M. Halamicek, R. R. Penn and Shell Pet. Corp. 1 ..... dry
King Ranch Oil & Lignite Co., T. P. Coal & Oil Co. 1 ..... dry
John F. Lane, G. E. Farley et al 1 306

Completions 3
Production 306
Dry holes 3

WARD COUNTY

John Sealy estate, Empire Gas & Fuel Co. 1 30
Charles Wallace, J. D. Kugle et al 1 ... 80
Boogher & Holden, Grand Falls Oil Co. 1 70
Charles Wallace, J. D. Kugle et al 1 ... 75
G. P. Hill, Prairie O. & G. Co. 1 70

Completions 5
Production 325

PANHANDLE FIELDS

SUMMARY OF FIELD OPERATIONS

County—	Comp.	Prod.	Dry	Gas
Carson	5	0	0	5
Childress	1	0	1	0
Gray	14	846	6	3
Hutchinson	3	1	1	3
Lipscomb	1	0	1	0
Moore	1	50	0	0
Motley	1	0	1	0
Potter	1	0	1	0
Wheeler	1	0	1	0
Total March	28	897	12	10
Total February	28	7,767	5	7
Difference	0	6,870	7	3

RIGS AND WELLS DRILLING

County—	Rgs.	S.D.	Dig.	Ttl.
Carson	5	4	5	14
Gray	6	9	18	33
Hutchinson	0	4	12	16
Moore	3	1	4	8
Wheeler	1	1	0	2
Miscellaneous counties	2	3	4	9
Total March	17	22	43	83
Total February	20	27	49	96
Difference	3	5	6	14

WELLS COMPLETED
CARSON COUNTY

Burnett (Sec. 100), Interstate P. L. Co. 1' ..... *gas
Burnett (Sec. 51), Texas Interstate P. L. Co. 1 ..... *gas
Moore, Ochsner et al 1 ..... *gas
Kalka, Plains Holding Co. 1-A ..... *gas
Jordan-A, Continental Oil Co. 1 ..... *gas

Completions 5
Gas wells 5
*157,000,000 feet of gas.

CHILDRESS COUNTY

Smith, Sloane et al 1 ..... dry

GRAY COUNTY

Heithholt, Magnolia Pet. Co. 2 15
Langham, Mid-Continent Pet. Corp. 3.. dry
Dial, Barker & Bourland 1 ..... *gas
Castleberry, Dixon Creek O. & R. Co. 9. 80
J. S. Morse, Warner Oil Co. 1 (loc. abandoned) ..... dry
Morse, Magnolia Pet. Co. 1 ..... *1
Sailor, Dixon Creek O. & G. Co. 2 ..... dry
Sailor, Dixon Creek O. & G. Co. 2 ..... dry
Ayres, Hurst et al 1 ..... dry
Case, Southern States Gas Co. 1 ..... dry
McLaughlin, Champlin Refining Co. 3 .. 240
Wall, Empire Gas & Fuel Co. 3 ..... *gas
Baer, McIlroy Oil Co. 1 107
Combs & Worley, The Sun Co. 2 404

Completions 14
Production 846
Dry holes 6
Gas wells 3
*45,500,000 feet of gas.

HUTCHINSON COUNTY

Johnson Bros.-A, Huber Pet. Co. 1 ....*gas
J. J. Perkins (Hamilton), Phillips Pet. Co. 1 ..... dry
Johnson Bros.-A, Prairie O. & G. Co. 70.*gas

Completions 3
Production 1
Dry holes 1
Gas wells 2
*13,0000,000 feet of gas.

LIPSCOMB COUNTY

Jones, Oklahoma Public Service Corp. 1 (temp. aband.) ..... dry

MOORE COUNTY

Coffee-C, Shamrock O. & G. Co. 1 50

MOTLEY COUNTY

Owens, Matador Oil Corp. 1 ..... dry

POTTER COUNTY

Crawford, Canadian River Gas Co. 1 .. dry

WHEELER COUNTY

D'Spain, Remo Oil Co. et al 1 ..... dry

SOUTHWEST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Mirando	15	1,875	6	3	7	30	37
Pettus area	2	760	0	0	0	6	6
Darst Creek	2	1,550	0	0	1	7	8
Unit Pool	0	0	0	0	0	0	0
Saxet Pool	0	0	0	0	0	6	6
White Point	1	40	0	0	0	2	2
Chapman Pool	8	312	1	0	3	1	4
Somerset	0	0	0	0	0	0	0
Dobrowolski	6	40	2	0	0	8	8
Eddington	1	10	1	0	0	1	1
Bruner	0	0	0	0	0	1	1
Luling	0	0	0	0	0	0	0
Slick Pool	1	100	0	0	0	1	1
Chittim	0	0	0	0	0	2	2
Lasater	0	0	0	0	0	1	1
Cartwright	0	0	0	0	1	2	3
Pryor	0	0	0	0	0	0	0
Agua Dulce	0	0	0	0	0	1	1
Lion-McFadden	1	0	0	0	0	1	1
Miscellaneous	12	500	11	0	13	114	127
Total Mar.	56	5,187	20	3	25	184	209
Total Feb.	72	6,050	34	10	26	170	196
Difference	16	863	14	7	1	14	13

WELLS COMPLETED

SCHOOLFIELD-O'BYRNE—DUVAL COUNTY

Bishop Cattle Co., Duval Oil Corp. 2 1500

S. R. C. POOL—DUVAL COUNTY

Duval County Ranch Co., S. R. C. and Vacuum Oil Co. 3 ..... abd

CUELLAR POOL—ZAPATA COUNTY

Cuellar, Brooklyn Oil Co. 1 ..... abd
Cuellar, O. W. Killam 41-B 100
Cuellar, A. R. McLennan 2 ..... gas

JENNINGS-MUCKELROY—ZAPATA COUNTY

Garza, Claypool and Nixon 2 60
Garza, Claypool and Nixon 3 125
C. Bustamente, Grimm and Yakey 2 .. abd
Garza, W. R. Shankie 2 10
Garza, W. R. Shankie 1 30
F. Cuellar, Shankie and Murray 1 .... gas

WILDCATS—DUVAL COUNTY

Wood-Weider, Buchanan et al 2 ..... abd

WILDCATS—WEBB COUNTY

Bruni, O. W. Killam 1 ..... gas

WILDCATS—ZAPATA COUNTY

P. Benavides, Lowe and Rogers 1 .... abd
S. Benavides, John J. O'Hern 2 ..... abd

Wells completed 15
Production 1875
Dry 6
Gas 3
Gas production 41,100,000

PETTUS AREA—BEE COUNTY

Ray, United Prod. Co. 31 400
Ray, United Prod. Co. 34 360

DOBROWOLSKI POOL—BEXAR COUNTY

Halberdier, Collin and Morosis 9 ..... abd
J. J. Brehm, Eckert & Son. 3 10
J. J. Brehm, Eckert & Son 6 10
J. J. Brehm, Eckert & Son 7 10
F. A. Beck, Gatlin Oil Co. 4 10
Medina Lbr. Co., Umburn et al 1 ..... abd

Wells completed 6
Production 40
Dry 2

EDDINGTON—FALLS COUNTY

H. H. Llewellyn, Eddington et al 2 10

SLICK POOL—GOLIAD COUNTY

G. W. Allen, T. B. Slick est. 1 100

DARST CREEK—GUADALUPE COUNTY

Denman, Humble Oil & Ref. Co. 22-A.. 900
Klein, Magnolia Pet. Co. 7 650

AGUA DULCE—NUECES COUNTY

Comstock, Houston Oil Co. 1 30
Walters, South Texas Prod. Co. 3 .... gas

WHITE POINT—SAN PATRICIO COUNTY

F. S. Rachel, Saxet Oil Co. 17 40

CHAPMAN POOL—WILLIAMSON COUNTY

J. J. Sides, Chapman et al 3-F 89
J. J. Sides, Chapman et al 4-F 50
J. J. Sides, Chapman et al 3-G 10
Lawrence, Collins et al 6 65
J. C. Abbott, Marts-Ertell 1 35
J. C. Abbott, G. Stratton 8 ..... abd
Lee Kilgore, Vitex Oil Co. 9 40
T. P. Simmons, Westbrook et al 8 23

Wells completed 8
Production 312
Dry 1

MISCELLANEOUS WILDCATS

Bee County—

Goree, Rowan and Hope 1 ..... abd

Caldwell County—

J. Tabor, Jim Harper 4 ..... abd

Goliad County—

Poetter, T. B. Slick est. 1 500

Guadalupe County—

Fannie Nixon, Luling O. & G. Co. 1 .. abd

Hays County—

Heidenrick, Harley and Whittington 1.. abd

Karnes County—

J. M. Newberry, Hurlbut et al 1 ..... abd

Lavaca County—

A. T. Hermes, Cranfill & Reynolds 1 .. abd

Live Oak County—

W. W. Goebel, Phillips Pet. Corp. 1 ... abd

Milam County—

V. O. Wall, Crawford et al 1 ..... abd

Nueces County—

William Baur, Grimm et al 1 ..... abd

Williamson County—

H. T. Martin, Hughes et al 1 ..... abd
J. Molasky, Lanning and Forward 1... abd

Wells completed 12
Production 500
Dry 11

EAST CENTRAL TEXAS

Monthly Summary of Operations for March

County—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Cherokee	1	0	1	0	0	1	1
Delta	0	0	0	0	0	3	3
Fannin	1	0	1	0	0	0	0
Gregg	10	44,100	3	0	14	25	39
Henderson	1	0	1	0	0	0	0
Lamar	0	0	0	0	0	1	1
Limestone	2	0	2	0	0	0	0
Navarro	1	0	1	0	0	1	1
Rains	0	0	0	0	0	1	1
Red River	0	0	0	0	0	1	1
Rusk	56	174,081	6	0	18	110	128
Van Zandt	19	44,240	8	1	1	10	11
Smith	0	0	0	0	1	3	4
Upshur	0	0	0	0	0	2	2
Total Mar.	91	262,421	23	1	34	158	192
Total Feb.	42	120,235	9	1	11	73	84
Difference	49	142,186	17	0	23	85	108

WELLS COMPLETED

CHEROKEE COUNTY

Mrs. M. Jones, Barry & Hale 1 ..... abd

FANNIN COUNTY

Morgan, J. A. Beck 1 ..... abd

GREGG COUNTY

McKinley, Arkansas Fuel Oil Co. 1 ...15,000
B. Rodden, East Texas Refining Co. 1..3800
Fisher, Frank Foster and East Texas Refining Co. 1 4800
Jasper Rodden, Frank Foster 1 2400
Maud Smith, O. L. Hickman 1 ..... abd
B. Rodden, Magnolia Petroleum Co. 1..4600
Maud Smith, Merron-Van Horn et al 1. abd
Tenery, Navarro Oil Co. 1 1500
Maud Smith, W. C. Ray Drilling Co. 1. abd
B. Rodden, Roeser-Pendleton, Frank Foster and East Texas Refining Co. 1-B 12,000

Wells completed 10
Production 44,100
Abandoned 3

HENDERSON COUNTY

Cade, E. L. Chapman 3 ..... abd

LIMESTONE COUNTY

Kosse Townsite, George B. McCamey 1-A ..... abd
Fenner, A. M. Yost 1 ..... abd

Wells completed 2
Abandoned 2

NAVARRO COUNTY

H. L. Albrighten, Priest et al 1 ..... abd

RUSK COUNTY

Moore, Anderson et al 1 ..... abd
Frederick, Anderson et al 2 3000
Thrash, Anderson et al (17½ acres) 1-A 1500
Young, Bill & Dave Oil Co. 1 2500
Florey, Burton Drilling Co. 1 2500
Cochran, Capps & Smith 1 ..... abd
Mayfield—Alford, Roy I. Carter 1 1320
Christian, Cordova Union Oil & Land Co. 1 4200
Mayfield—Alford, C. P. Oil Co. 3 1500
Giles, East Texas Refining Co. 1 4000
Laird, Federated Oil Co. 1 4500
Mayfield—Alford, Federated Oil Co. 2..1500
Ashby, Frank Foster and Deep Rock Oil Co. 2 750
Thrash, Fox-Butler-Reflin 1 4000
W. M. Camp, L. P. Hammond 1 250
Camp, W. B. Hamilton-Consolidated Oil Co. et al 2 1200
Jobe, W. B. Hamilton-Consolidated Oil Co. et al 1 1500
Brown, Haynes Drilling Co. 2 4000
Crim, Humble Oil & Refining Co. 2 ...8095
Crim, Humble Oil & Refining Co. 3 ...4800
Crim, Humble Oil & Refining Co. 4 ...2500
Crim, Humble Oil & Refining Co. 5 ...2600
B. F. Laird, Humble Oil & Refining Co. 1 1920
J. N. Peterson, Humble Oil & Refining Co. 1-A 2832
Ashby, H. L. Hunt 3 500
Ashby, H. L. Hunt 4 550
Mayfield—Alford, H. L. Hunt 1 1860
Mrs. W. R. Crim, E. M. Joiner et al 1.10,991
J. M. Crim, E. M. Jones and Houston Oil Co. 1-B 8500
Peterson, E. M. Jones and Houston Oil Co. 1-A ..... abd
Peterson, Karona Oil Co. 1 3628
Nively, Lloyd Oil Co. 1 ..... a'd
Brightwell, Luling Oil & Gas Co. 1 ...3100
W. R. Crim, Magnolia Petroleum Co. 2..5000
L. D. Crim, Magnolia Petroleum Co. 1 .4400
Della Crim, Magnolia Petroleum Co. 2.15,000
Della Crim, Magnolia Petroleum Co. 3.. abd
Della Crim, Magnolia Petroleum Co. 4.20,000
Thrash, John E. Maybee, Inc., 1 3000
Mayfield—Alford, Moss & Urschel 1 ... 250
Brown, Olsen Brothers 1 4800
W. R. Crim, John W. Olvey 1 880
Finney, Pilot Oil Co. 1 3360
Deason, Petroleum Marketing Co. 1 ...3000
Robertson, Rusk County Oil Co. 1 .... abd
Holland, Sinclair Oil & Gas Co. 1 2000
Holland, Sinclair Oil & Gas Co. 2 1937
Holland, Sinclair Oil & Gas Co. 3.....1800
Holland, Sinclair Oil & Gas Co. 4.....1500
Ashby, Shaw Oil Co. 2 2240
Thrash, Shaw Oil Co. 1-A 2500
Peterson, Henry Smith et al 1 6634
Daisy Bradford, E. R. Tennant 1 1312
Holland, Tidal Oil Co. 1 2472
Camp, Warner-Quinlan 1 1900

Wells completed 56
Production 174,081
Abandoned 6

VAN ZANDT COUNTY

O. L. and L. L. Swain, Cranfill & Germany 1 ..... abd
Fannie Cumbine, T. Daniels 1 ..... abd
C. W. Morris, Dennis Oil Co. 1 ..... abd
Blake, Humble Oil & Refining Co. 9 ..10,000
Blake, Humble Oil & Refining Co. 10..1500
L. A. Dowdle, Humble Oil & Refining Co. 1 ..... abd
R. E. Cade, Pure Oil Co. 2 1620
Blackstock, Pure Oil Co. 1 ..... abd
Jarman, Pure Oil Co. 6 ..... gas
Smith, Pure Oil Co. 4 4,000
Clark, Pure Oil Co. 9 500
Wells, Pure Oil Co. 12 6000
Swain, Pure Oil Co. 4 120
Enas, Pure Oil Co. 1 1500
E. L. Fowler, Shell Petroleum Corp. 9.10,000
T. J. Wallace, Sun Oil Co. 2 9000
Smith, Vitek Oil Co. 1 (loc.) ..... abd
R. W. Beggs, Whitmore Oil & Gas Co. 1 ..... abd
M. B. Fisher, Wilson et al 1 ..... abd

Wells completed 19
Production 44,240
Abandoned 8
Gas 1

EAST TEXAS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dig.	Ttl.
Bowie	0	0	0	0	1	3	4
Camp	0	0	0	0	0	1	1
Cass	0	0	0	0	2	5	7
Harrison	2	0	2	0	6	3	9
Marion	0	0	0	0	2	5	7
Panola	0	0	0	0	1	8	9
Red River	0	0	0	0	0	2	2
Shelby	0	0	0	0	3	1	4
Ttl. Mar.	2	0	2	0	15	28	43
Ttl. Feb.	2	0	1	1	11	22	33
Difference	0	0	1	1	4	6	10

WELLS COMPLETED

HARRISON COUNTY

Humphries-Dunn Survey, Humphries, Crump & Hannegan 1 ..... dry
W. D. Burke Survey, Doherty, S. D. Hunter 1 ..... dry

ARKANSAS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dig.	Ttl.
Chicot	0	0	0	0	1	1	
Cleburne	0	0	0	0	1	1	
Crawford	1	0	0	1	0	0	0
Dallas	0	0	0	0	0	2	2
Garland	0	0	0	0	0	1	1
Grant	0	0	0	0	0	1	1
Hot Springs	1	0	1	0	0	1	1
Lafayette	0	0	0	0	0	2	2
Lawrence	0	0	0	0	0	1	1
Little River	0	0	0	0	0	1	1
Logan	0	0	0	0	0	1	1
Madison	0	0	0	0	0	2	2
Miller	0	0	0	0	1	8	9
Ouachita	0	0	0	0	0	5	5
Pike	0	0	0	0	1	1	2
Pope	0	0	0	0	0	2	2
Sebastian	0	0	0	0	1	0	1
Union	3	390	1	0	2	7	9
Van Buren	0	0	0	0	0	1	1
Washington	0	0	0	0	0	3	3
Yell	0	0	0	0	0	1	1
Ttl. Mar.	5	390	2	1	7	40	47
Ttl. Feb.	5	215	2	1	10	44	54
Difference	0	175	0	0	3	4	7

*Gas production: Crawford County, 20,000,000 feet.

WELLS COMPLETED

CRAWFORD COUNTY

18- 9-32 Hood, Citizens Gas Co. 1 ... gas

Gas production 20,000,000

HOT SPRINGS COUNTY

19- 4-16 Hinson, Ainsman et al 1 .... dry

SCOTT COUNTY

27- 5-12 Turner, Ark. Valley Gas Co. 1 (loc.) ..... abd

UNION COUNTY

10-18-13 Thompson, Marine Oil Co. 2-B 300
18-18-3 Union Saw Mill Co., C. H. Murphy 1 ..... dry
12-17-14 Pumphrey, Ohio Oil Co. 5 90

Production 390

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas*	Rgs.	Dig.	Ttl.
Bienville	0	0	0	0	1	1	
Bossier	1	0	0	1	1	6	7
Caddo	1	0	1	0	3	9	12
Caldwell	0	0	0	0	1	1	2
Catahoula	0	0	0	0	0	1	1
Claiborne	1	0	1	0	0	1	1
Concordia	2	0	1	1	0	2	2
DeSoto	2	0	2	0	1	4	5
Morehouse	0	0	0	0	1	0	1
Natchitoches	1	0	1	0	0	4	4
Ouachita	0	0	0	0	0	2	2
Red River	0	0	0	0	0	2	2
Richland	3	0	1	2	7	6	13
Sabine	14	1,665	10	0	8	18	26
Tensas	0	0	0	0	0	2	2
Union	0	0	0	0	1	2	3
Vernon	0	0	0	0	0	1	1
Webster	0	0	0	0	1	2	3
Ttl. Mar.	25	1,665	17	4	26	62	88
Ttl. Feb.	32	2,175	17	11	19	67	86
Difference	7	510	0	7	7	5	2

*Gas production: Bossier, 2,500,000 feet; Concordia, 7,000,000 feet; Richland, 84,024,000 feet; total, 93,524,000 feet.

WELLS COMPLETED

14- 7-12 Smith, United Gas Service Corp. 1-A ..... gas

Gas production 2,500,000

CADDO PARISH

29-15-16 Foster, R. H. Libby et al 1 .. dry

CLAIBORNE PARISH

19-21-7 Langston, La. Oil Ref. Corp. 1 dry

CONCORDIA PARISH

47- 9-8 Alexander, Ark.-La. Pipe Line Co. 1 ..... dry
11- 8- 9-42 Saunders, United Gas Pub. Service Corp. 3 ..... gas

Gas production 7,000,000

DE SOTO PARISH

31-14-14 Dowling Bros., S. A. Guy 1 .. dry
5-13-13 Farmer, Standard Oil Co. 6-A dry

NATCHITOCHES PARISH

13-13-8 Bodcaw, Gulf Refining Co. 1.. dry

RICHLAND PARISH

37-15-6 Noble, Southern Carbon Co. 1 dry
35-17-6 Woolf, United Production Corp. 1-A ..... gas
34-17-6 Woolf, United Production Corp. 1-B ..... gas

Gas production 84,024,000

SABINE PARISH

25- 8-12 Newton, Bradley Drilling Co. 1 dry
1- 7-13 Hale, Buttram Oil & Gas Co. 1 35
22- 8-11 Hays, Franks et al 1 ..... dry
34-10-12 Cook Land Co., John Henry Oil & Gas Co. 2 ..... dry
21- 7-11 Hubley, Lawrence et al 1 .... dry
28- 8-10 Brown Lbr. Co., Lucy-Jessup Oil Co. 1 ..... dry
2- 5-12 Lucius, Magnolia Petroleum Co. 1 ..... dry
1- 7-11 Byrd, Merritt, Trustee 1 1200
2- 7-12 Bowman-Hicks, Ohio Oil Co. 6 30
21 7-12 Williams, P. & G. Oil Co. 1 (loc.) ..... abd
10- 7-11 Pearce, W. P. Pearce et al 1. dry
2- 7-12 Bowman-Hicks, H. W. Perritt 2 400
18- 9-12 Scretchfield, D. H. Reddick, Trustee 1 ..... dry
10- 7-11 Stoker, J. M. Thompkins 1 ... dry
4- 5-12 Gandy-Garrett, Wilson & Sons 1 ..... dry

Wells completed 14
Production 1665
Dry 10

GULF COAST FIELDS

Summary of Field Operations for March

Texas Coast

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Allen	2	0	2	0	0	1	1
Barbers Hill	8	5,945	1	0	3	21	24
Big Creek	1	750	0	0	0	1	1
Blue Ridge	1	19	0	0	1	0	1
Clay Creek	3	420	0	0	0	1	1
Damon	0	0	0	0	0	1	1
Esperson	0	0	0	0	0	3	3
Hankamer	1	1,500	0	0	0	0	0
High Island	1	0	1	0	2	0	2
Hull	2	24	0	1	0	0	0
Humble	5	1,066	2	0	0	3	3
Lost Lake	0	0	0	0	1	0	1
Liberty	1	0	1	0	0	0	0
Moss Bluff	2	0	2	0	1	0	6
North Dayton	1	0	1	0	0	0	0
Orchard	0	0	0	0	0	2	2
Pierce Junc.	5	1,400	2	0	1	9	10
Raccoon Bend	4	0	3	1	1	1	2
Refugio	10	841	3	1	2	19	21
Saratoga	2	73	0	0	0	1	1
Spindletop	1	250	0	0	0	2	2
W. Columbia	1	0	1	0	0	0	0
Miscellaneous	19	700	16	1	2	23	25
Total Mar.	70	12,988	35	4	14	93	107
Total Feb.	70	15,619	28	3	15	112	127
Difference	0	2,631	7	1	1	19	20

South Louisiana

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Drlg.	Ttl.
Black Bayou	1	0	1	0	0	3	3
Bayou Blue	0	0	0	0	0	2	2
Bay. Bouillon	0	0	0	0	0	2	2
Edgerly	1	50	0	0	0	1	1
Hackberry	1	164	0	0	0	1	1
Jennings	3	70	0	0	0	1	1
Lake Barre	1	360	0	0	0	1	1
Lockport	2	1,290	0	0	0	4	4
Port Barre	0	0	0	0	0	1	1
Sorrento	0	0	0	0	0	1	1
Starks	1	15	0	0	0	0	0
Sulphur	1	54	0	0	0	3	3
Sweet Lake	1	400	0	0	0	2	2
Vinton	4	230	2	0	0	4	4
Welsh	0	0	0	0	0	1	1
Miscellaneous	4	0	4	0	1	16	17
Total Mar.	20	2,633	7	0	1	43	44
Total Feb.	24	3,234	14	2	6	32	38
Difference	4	601	7	2	5	11	6

Summary Gulf Coast

Total Mar.	90	15,621	42	4	15	136	151
Total Feb.	94	18,853	42	5	21	144	165
Difference	4	3,232	0	1	6	8	14

GULF COAST TEXAS COAST

ALLEN DOME—BRAZORIA COUNTY

Random, Mills Bennett Production Co. 2 ..... abd
Reese, Mills Bennett Production Co. 2. abd

Wells completed 2
Abandoned 2

BARBERS HILL—CHAMBERS COUNTY

E. W. Barber, Mills Bennett Production Co. 1-B 250
Higgins, Mills Bennett Production Co. 5 abd
Louise Fitzgerald, Humphreys Corp. 1..1600
Wilburn, McAlbert Oil Co. 3 1825
Williams, The Texas Company 1 ..... abd
Winfree, Yount Lee Oil Co. 1 1250
Chambers, Yount Lee Oil Co. 16 330
Chambers, Yount Lee Oil Co. 18 690

Wells completed 8
Production 5945
Abandoned 1

BIG CREEK—FORT BEND COUNTY

Davis, Gulf Production Co. 43 750

CLAY CREEK—WASHINGTON COUNTY

Caraway, Sun Oil Co. 5 125
C. H. Marcus, Sun Oil Co. 2 115
Witt, Sun Oil Co. 6 180

Wells completed 3
Production 420

BLUE RIDGE—FORT BEND COUNTY
Blakely, Sinclair Oil & Gas Co. B-4 ... 19
HANKAMER—LIBERTY COUNTY
Boyt, Gulf Production Co. 12 1500
HIGH ISLAND—GALVESTON COUNTY
Cade, Marrs McLean 16 ..... abd
HULL—LIBERTY COUNTY
Dolbear, Republic Production Co. 143.. gas
Barrow, The Texas Company 4 24

Wells completed 2
Production 24
Gas 1

HUMBLE—HARRIS COUNTY
Fee, Rio Bravo Oil Co. 6 21
Bender, Sun Oil Co. 17 ..... abd
Bender, Sun Oil Co. 20 570
Bender, Sun Oil Co. 21 475
O'Neill, Trapshooter Riley Oil Co. 1 .. abd

Wells completed 5
Production 1066
Abandoned 2

LIBERTY—LIBERTY COUNTY
Pickett, Trinity Southern Oil Co. 1 ... abd
MOSS BLUFF—LIBERTY COUNTY
Carter, Texas Gulf Sulphur Co. 2 ..... a d
Carter, Texas Gulf Sulphur Co. 3 ..... abd
NORTH DAYTON—LIBERTY COUNTY
Pruitt, Deering & Kayser 8 ..... abd
PIERCE JUNCTION—HARRIS COUNTY
Whitehead, Anderson & Plummer 6 ... abd
Prudential, Bryan Ward, trustee 1 200
Taylor, Gulf Production Co. 23 ..... abd
Boyles, Moody Corp. 1 800
Perry, Navarro Oil Co. 2 400

Wells completed 5
Production 1400
Abandoned 2

RACCOON BEND—AUSTIN COUNTY
Dietrich, H. R. Flannigan 2 ..... abd
Ed Grawunder, Humble Oil & Refining Co. 3-A ..... gas
Payne, Humble Oil & Refining Co. 2 . abd
Payne, Humble Oil & Refining Co. 11 . abd

Wells completed 4
Production 0
Abandoned 3
Gas 1

REFUGIO—REFUGIO COUNTY
Ryals, Houston Oil Co. 4 100
Mitchell, Ed Jones 2-B 20
City Block 86, Luling Oil & Gas Co. 1. 350
St. John, T. P. Morgan 1-B 20
Morgan O'Connor, Moody-Seagraves Producing Co. 6 ..... abd
Morgan O'Connor, Moody-Seagraves Producing Co. 7 ..... gas
Hayser, Moody-Seagraves Producing Co.-Karona 1 ..... abd
W. Heard, Saxet Co. 4-A 51
Fannie Heard, United Production Corp. 11 ..... abd
Power, United Production Corp. 3 300

Wells completed 10
Production 841
Abandoned 3
Gas 1

SARATOGA—HARDIN COUNTY
Cotton, Rio Bravo Oil Co. 109-A 18
Cotton, Rio Bravo Oil Co. 11-A 55

Wells completed 2
Production 73

SPINDLETOP—JEFFERSON COUNTY
McFaddin, Yount Lee Oil Co. 111 250
WEST COLUMBIA—BRAZORIA COUNTY
Smith, Don Anderson et al 1 ..... abd
MISCELLANEOUS TEXAS
BRAZORIA COUNTY
Manvel—Ewing, The Texas Company 1. gas
BURLESON COUNTY
H. E. Davis Survey, Sparks, Paul Doran et al 1 ..... abd
COLORADO COUNTY
Schneider Survey, Surcek, A. H. Eaton et al 1 ..... abd
GRIMES COUNTY
Templeman, Deering & Noble 1 ..... a d
Cienski, Humble Oil & Refining Co. 1-A abd
HARDIN COUNTY
Lancaster Survey, Walton, Hooks et al 1 abd
HARRIS COUNTY
Kitzman, Baldwin et al 1 ..... abd
Augsperger, Gulf States Oil Co. 1 ... abd
Mykawa—Minnetex, Humble Oil & Refining Co. 4 ..... abd
Mykawa—Gehring, Humble Oil & Refining 1 400
Mykawa—Minnetex, Humble Oil & Refining Co. 3 300
Cedar Bayou—Ulrich, Sloan Prospecting Co. 2 ..... abd
JACKSON COUNTY
Hungeford, Warner-Quinlan 1 ..... abd
LIBERTY COUNTY
Clayton Harper Survey, Hornbeck, J. R. Ingram 1 ..... abd
MONTGOMERY COUNTY
D. F. Wilden Survey, Knight, John Deerin et al 1 ..... abd
Brautigan, Humble Oil & Refining Co. 1-A ..... abd
Campbell, Humble Oil & Refining Co. 1-A ..... abd
ORANGE COUNTY
Vidor—Miller-Vidor, Gulf Production Co. 1 ..... abd
WHARTON COUNTY
I. B. Phillips Survey, Hudgins, H. H. Givens 1 ..... abd

Wells completed 19
Production 700
Abandoned 16
Gas 1

SOUTH LOUISIANA
BLACK BAYOU—CAMERON PARISH
Yount Lee, Freeport Sulphur Co. 8 .... abd
EDGERLY—CALCASIEU PARISH
Paraffine, Associated Oil Co. 5 50
HACKBERRY—CAMERON PARISH
Watkins, Calcasieu Oil Co. 25 164
JENNINGS—ACADIA PARISH
Conklin, Cline, Smith & Cline 10 40
Clement, Fred I. Ketty 12 15
J. F. S., Heywood & Heywood 7 16

Wells completed 3
Production 70

LAKE BARRE—TERREBONNE PARISH
State, The Texas Company 9 360
LOCKPORT—CALCASIEU PARISH
Bordages, Vacuum Oil Co. 9 1250
Miller, Vacuum Oil Co. 31 40

Wells completed 2
Production 1290

STARKS—CALCASIEU PARISH
Lutcher-Moore, Gulf Refining Co. 10 ... 15
SULPHUR—CALCASIEU PARISH
Fee, Union Sulphur Co. 749 54
VINTON—CALCASIEU PARISH
Matilda Gray, Freeport Sulphur Co. 1 . abd
Clement-Lyons, Gorbat Oil Co. 1 ..... abd
Gray, Vinton Petroleum Co. 10 30
Wilson, Wilson-Broach 8 200

Wells completed 2
Production 230
Abandoned 2

MISCELLANEOUS LOUISIANA
IBERVILLE PARISH
Bayou Choctaw—Wilbert, Texas Gulf Sulphur Co. 8 ..... abd
PLAQUEMINES PARISH
Rose—Buras Lee, Gulf Refining Co. 2-B abd
ST. MARTIN
Section 66-11s-6e, Barras, Harrison & Abercrombie 1-A ..... abd
VERMILLION PARISH
Gyedan—Southwest Louisiana Ld. Co., Pure Oil Co. 1 ..... abd

MISSISSIPPI FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Clark	0	0	0	0	1	1	
Clay	0	0	0	0	1	1	
Covington	1	0	1	0	0	0	
Grenada	0	0	0	0	1	1	
Hinds	1	0	1	0	1	8	9
Jasper	0	0	0	0	1	1	
Lafayette	0	0	0	0	1	0	1
Madison	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	3	3
Rankin	0	0	0	0	3	3	6
Smith	0	0	0	0	0	1	1
Warren	0	0	0	0	0	1	1
Winston	0	0	0	0	0	1	1
Yalobusha	0	0	0	0	0	1	1
Ttl. Mar.	2	0	2	0	5	23	28
Ttl. Feb.	8	0	5	3	7	20	27
Difference	6	0	3	3	2	3	1

WELLS COMPLETED
COVINGTON COUNTY
5- 8-16 McIntosh, United Production Co. 1 ..... dry
HINDS COUNTY
14- 5-1 Solvent Investment Co., Miss. Petroleum Co. 1 ..... dry

MISSOURI

Summary of Field Operations

	Comp.	Prod.	Dry	Rgs.	Dlg.	Ttl.
St. Louis	1	0	1	0	1	1
Ttoal Mar.	1	0	1	0	1	1
Total Feb.	0	0	0	0	2	2
Difference	1	0	1	0	1	1

WELLS COMPLETED
ST. LOUIS COUNTY
St. Ferdinand—R. J. Cullie, St. Elco Dev. Co. 1 ..... dry

KENTUCKY FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Barren	2	0	0	2	0	7	7
Ohio	3	0	2	1	4	27	31
Daviess	1	0	0	1	0	16	16
Hancock	4	215	0	0	0	6	6
Henderson	1	10	0	0	0	1	1
McLean	7	60	3	0	8	1	9
Webster	3	15	0	2	0	0	0
Hart	22	250	11	9	0	48	48
Hopkins	0	0	0	0	0	2	2
Union	0	0	0	0	0	2	2
Todd	0	0	0	0	0	1	1
Muhlenberg	2	35	1	0	0	3	3
Caldwell	0	0	0	0	0	1	1
Green	2	50	0	0	0	4	4
Cumberland	0	0	0	0	0	2	2
Metcalf	1	0	0	1	0	0	0
Wayne	0	0	0	0	0	2	2
Estill	0	0	0	0	0	3	3
Lee-Owsley	1	2	0	0	0	3	3
Lawrence-Johnson	0	0	0	0	0	3	3
Johnson-Magoffin	0	0	0	0	0	4	4
Clay	0	0	0	0	1	0	1
Knox	1	0	0	1	0	1	1
McCracken	0	0	0	0	0	1	1
Madison	0	0	0	0	0	1	1
Floyd	0	0	0	0	0	4	4
Bell	0	0	0	0	0	1	1
Total Mar.	50	637	17	17	13	144	157
Total Feb.	51	1,958	17	16	9	157	166
Difference	1	1,321	0	1	4	13	9

WELLS COMPLETED
BARREN COUNTY
Glasgow—Edwards estate, Garvin Oil & Gas 1 ..... gas
John Myers, Unknown 1 ..... gas

Wells completed 2
Gas 2

OHIO COUNTY
Hartford—T. J. Griffith, Kentucky Nat. Gas 6 ..... dry
Frank White, H. C. Smith & Co. 1 .. dry
John Bellamy, Jenkins & Co. 1 ..... gas

Wells completed 3
Dry 2
Gas 1

DAVIESS COUNTY
Owensboro—Hart Salmon, C. E. Daugherty 1 ..... gas
HANCOCK COUNTY
Pellville—L. Richards, D. T. Bolling 3.. 10
Parrott, Huff, Rosella & Co. 1 25
Will Bates, Chester Oil 4 100
J. T. Crow E-60-A, Olean Pet. 3 80

Wells completed 4
Production 215

HENDERSON COUNTY
Niagara—R. T. Parker, Pearson Pet. 2.. 10
McLEAN COUNTY
Calhoun—G. B. and R. L. McManama, The Pure Oil 4 ..... dry
Island Well, Allied Oil Corp. 1 30
Central State Bank, Mel Root & Co. 2 10
Olive Shockley, Pampas Oil & Gas 1.. 10
L. A. Atherton, Pampas Oil & Gas 1.. 10
L. A. Atherton, Pampas Oil & Gas 2.. dry
Gil Carroway, Ballentine, Bryan & Co. 1 ..... dry

Wells completed 7
Production 60
Dry 3

WEBSTER COUNTY
Sebree—Barney Melton, Iley J. Browning 1 ..... gas
Fred Powell, Wattmer Oil & Gas 3 .... gas
Edward Walker, Christian & Schmitt 2 15

Wells completed 3
Production 15
Gas 2

HART COUNTY
Legrande—William Hensley, Dr. Sirman 1 150
Harvey Gaines, Unknown 1 100
John Rowntree, Pearson Pet. 1 ..... dry
J. L. Roberts, Pearson Pet. 1 ..... gas
H. A. Cook, Unknown 1 ..... dry
Thomas Robinson, Unknown 1 ..... dry
S. M. Lawler, Unknown 1 ..... dry
J. W. Wilkinson, Unknown 1 ..... dry
W. Stinson, Unknown 1 ..... dry
West of Bonneville, Unknown 1 ..... dry
Nim Sweet, Unknown 1 ..... dry
West of Hinesdale, Unknown 1 ..... dry
S.W. of Hinesdale, Unknown 1 ..... dry
N.W. of Hinesdale, Unknown 1 ..... gas
P. T. Vaughn, Unknown 1 ..... dry
P. T. Vaughn, Unknown 2 ..... gas
J. P. Sturgeon & Co., Unknown 1 .... gas
L. R. Lester, Unknown 1 ..... gas
W. M. Barlow, Unknown 1 ..... gas
W. W. Walton, Unknown 1 ..... gas
W. V. Bell, Unknown 1 ..... gas
Mayfield, Unknown 1 ..... gas

Wells completed 22
Production 250
Dry 11
Gas 9

MUHLENBERG COUNTY
Greenville—Hugh Lee, Ellis & Young 2 35
G. O. Drake, George Engle & Co. 1 .. dry

Wells completed 2
Production 35
Dry 1

GREEN COUNTY
Greensburg—Near Hudgins, Barren County Oil & Gas 1 35
Aikin, Treamers & Co. 1 15

Wells completed 2
Production 50

METCALF COUNTY
Edmonton—A. T. Lowe, Unknown 1 .... gas
LEE-OWSLEY COUNTIES
District 18—Robert Day, James G. Cooper 5 2
KNOX COUNTY
Barboursville — Helton, Distill-Martin Gas 3 ..... gas

TENNESSEE FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Putnam	0	0	0	0	1	1	
Smith	0	0	0	0	1	1	
Warren	0	0	0	0	1	1	
Clay	0	0	0	0	2	2	
White	0	0	0	0	1	1	
Dickson	0	0	0	0	2	2	
Morgan	0	0	0	0	2	2	
Lincoln	0	0	0	0	2	2	
Overton	0	0	0	0	2	2	
Franklin	0	0	0	0	1	1	
Cheatham	0	0	0	0	1	1	
Robertson	0	0	0	0	1	1	
Total Mar.	0	0	0	0	17	17	
Total Feb.	0	0	0	0	17	17	
Difference	0	0	0	0	0	0	

ROCKY MOUNTAIN AREA

MONTANA
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Carbon	0	0	0	0	3	4	7
Cascade	0	0	0	0	0	2	2
Fergus	0	0	0	0	0	5	5
Glacier	0	0	0	0	1	4	5
Golden Valley	0	0	0	0	0	2	2
Hill	2	0	0	2	1	2	3
Judith Basin	0	0	0	0	0	2	2
Liberty	0	0	0	0	1	4	5
Petroleum	0	0	0	0	0	2	2
Pondera	0	0	0	0	0	2	2
Rosebud	0	0	0	0	0	2	2
Sheridan	0	0	0	0	1	1	2
Sweetgrass	0	0	0	0	0	1	1
Teton	0	0	0	0	1	2	3
Toole	3	12	1	1	3	10	13
Miscellaneous	0	0	0	0	1	12	13
Total Mar.	5	12	1	3	12	57	69
Total Feb.	6	15	3	2	11	59	70
Difference	1	3	2	1	1	2	1

WELLS COMPLETED
28-33-12e Roebuck, Jones-Rice-Perkins 1 gas
4-32-12e Dull, Jones-Rice-Perkins 1.. gas
27-35- 1w Levnick, Nepstad-Vander-Pas. 5 12
25-35- 2w Abell, United Pet. Co. 8..... gas
29-33- 1e McSweeney, 67 Pet. Co. 1.... dry

Wells completed 5
Production 12
Gas 3
Dry 1
Gas production 5,000,000

NEW MEXICO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Chaves	0	0	0	0	0	2	2
De Baca	0	0	0	0	0	2	2
Eddy	1	0	1	0	0	5	5
Lea	2	4,108	0	0	5	7	12
McKinley	0	0	0	0	0	6	6
Rio Arriba	0	0	0	0	0	4	4
San Juan	0	0	0	0	1	7	8
San Miguel	0	0	0	0	0	5	5
Torrance	0	0	0	0	0	2	2
Valencia	0	0	0	0	0	2	2
Miscellaneous	0	0	0	0	2	7	9
Total Mar.	3	4,108	1	0	8	49	57
Total Feb.	13	41,748	2	0	11	51	62
Difference	10	37,640	1	0	3	2	5

WELLS COMPLETED
9-19-33 Terry, Midwest Ref. Co. 8.....3388
17-21-36 Coleman Atlantic Oil Prod. 1. 720
5-19-28 State, Flynn, Welch & Wates 59 dry

Wells completed 3
Production 4108

COLORADO
Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Fremont	0	0	0	0	0	12	12
La Plata	0	0	0	0	0	3	3
Larimer	0	0	0	0	4	8	12
Las Animas	0	0	0	0	1	3	4
Moffat	0	0	0	0	6	5	11
Montezuma	1	0	1	0	0	0	0
Montrose	1	0	1	0	0	1	1
Morgan	0	0	0	0	0	2	2
Rio Blanco	0	0	0	0	0	2	2
Routt	0	0	0	0	1	2	3
Weld	0	0	0	0	0	2	2
Miscellaneous	0	0	0	0	1	33	34
Total Mar.	2	0	2	0	13	73	86
Total Feb.	6	846	3	0	13	75	88
Difference	4	846	1	0	0	2	2

WELLS COMPLETED
27-50-10 Colo. T. & T., Uncompahgre O. & G. 1 ..... dry
34-36-14 Haller, Fred C. Haller 4..... dry

Wells completed 2
Dry 2

WYOMING
Summary of Field Operations

Dist. or County—	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Salt Creek	0	0	0	0	0	1	1
Big Horn	0	0	0	0	0	5	5
Carbon	0	0	0	0	0	9	9
Converse	0	0	0	0	1	5	6
Fremont	0	0	0	0	0	6	6
Hot Springs	0	0	0	0	0	2	2
Johnson	0	0	0	0	0	2	2
Lincoln	0	0	0	0	0	2	2
Natrona*	0	0	0	0	1	11	12
Niobrara	1	0	0	1	0	1	1
Park	0	0	0	0	4	13	17
Sweetwater	0	0	0	0	1	8	9
Sublet	0	0	0	0	0	5	5
Washakie	0	0	0	0	0	1	1
Uinta	0	0	0	0	0	6	6
Weston	0	0	0	0	2	12	14
Total Mar.	1	0	0	1	9	89	98
Total Feb.	3	950	0	0	15	96	111
Difference	2	950	0	1	6	7	13

*Exclusive of Salt Creek.

WELLS COMPLETED
5-35-65 Elliott, Argo Oil Co. 1..... gas

Wells completed 1
Gas 1
Gas production 6,000,000

UTAH
Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Total Mar.	0	0	0	0	0	20	20
Total Feb.	0	0	0	0	0	20	20
Difference	0	0	0	0	0	0	0

CENTRAL OHIO FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Ashland	1	0	0	1	3	11	14
Medina	5	61	1	0	0	3	3
Lorain	3	0	1	2	5	6	11
Wayne	1	0	0	1	0	5	5
Holmes	0	0	0	0	0	1	1
Cuyahoga	0	0	0	0	0	1	1
Ashtabula	0	0	0	0	0	2	2
Richland	0	0	0	0	2	3	5
Knox	0	0	0	0	0	1	1
Coshocton	2	0	1	1	5	5	10
Summitt	0	0	0	0	1	2	3
Licking	3	37	1	1	1	2	3
Muskingum	5	172	1	3	6	10	16

Athens	6	0	1	5	2	8	10
Lawrence	0	0	0	0	3	5	8
Tuscarawas	1	0	0	1	2	2	4
Stark	0	0	0	0	5	13	18
Guernsey	1	20	0	0	0	8	8
Belmont	2	0	1	1	1	4	5
Gallia	0	0	0	0	0	2	2
Scioto	0	0	0	0	0	2	2
Pike	0	0	0	0	0	2	2
Geauga	0	0	0	0	0	1	1
Total Mar.	30	290	7	16	36	99	135
Total Feb.	73	601	25	39	35	89	124
Difference	43	311	18	23	1	10	11

WELLS COMPLETED

ASHLAND COUNTY

Lake—Lewis Sprang, Robinson & Co. 1 gas

MEDINA COUNTY

Chatham—C. G. Chapman, C. L. Williams & Co. 2 1
Ira Cleveland, Preston Oil 3-1,485 25
Marcus A. Frank, Edison & Co. 15 .. dry
Marcus A. Frank, Edson & Co. 16 .. 30
Archie E. Packard, Edson & Co. 13 .. 5

Wells completed 5
Production 61
Dry 1

LORAIN COUNTY

Columbia—C. E. Lehman, Ohio Fuel Gas 1-5,409 ..... dry
E. N. Gilpin, Dillon & McFredricks 2 gas
G. and N. Allen, McMillan & Co. 3 .. gas

Wells completed 3
Dry 1
Gas 2

WAYNE COUNTY

Chester—Jos. B. Sherrick, Ditch & Co. 3 ..... gas

COSHOCTON COUNTY

Perry—Clark, Preston Oil 1-1,461 ..... dry
Oxley, Ohio Fuel Gas 1 ..... gas

Wells completed 2
Dry 1
Gas 1

LICKING COUNTY

Fallsburg—Granville Ashcraft, G. H. Long 3 ..... gas
Hanover—H. C. Priest, Pure Oil Co. 3 .. 37
Bennington—L. S. Robinson, Wehrle Gas 4 ..... dry

Wells completed 3
Production 37
Dry 1
Gas 1

MUSKINGUM COUNTY

Hopewell—Marion Leasure, Preston Oil 1-1,466 172
Wayne—Mary Corbin & Co., Atha Co. 1. gas
Washington—Thos. J. Chaplin, Wittmer Prop., tr. 2 ..... gas
Perry—Carl W. Riley, Wittmer Prop. tr. 1 ..... dry
Brush Creek—Roy R. Pletcher, Fritz O. & G. 1 ..... gas

Wells completed 5
Production 172
Dry 1
Gas 3

ATHENS COUNTY

Alexander—Chas. E. Chase, A. H. Heisey 1 ..... dry
York—Nelsonville Foundry, J. J. Walters & Co. 1 ..... gas
Wm. Roach, Standard Nat. Gas. 1 ... gas
Carthage—F. W. Chapman, Shady River O. & G. Co. 13 ..... gas
Cannan—August Brechtel, C. W. Nusum & Co. 2 ..... gas
Berne—Geo. E. Wyatt, Gifford & Co. 2 gas

Wells completed 6
Dry 1
Gas 5

TUSCARAWAS COUNTY

Oxford—Phil Lamneck, Oxford O. & G. 4 ..... gas

GUERNSEY COUNTY

Wheeling—Loren C. Stocker, Preston Oil 4-1,448 20

BELMONT COUNTY

Somerset—N. E. Slevin, M. W. Fulton & Co. 4 ..... gas
Carrie J. Smith, W. C. McBride, Inc. 2 ..... dry

Wells completed 2
Dry 1
Gas 1

EASTERN FIELDS

Summary of Completed Work

Field—	Comp.	Prod.	Dry	Gas
Allegany	1	2	0	0
Bradford	13	30	0	0
Venango-Clarion	6	2	3	1
Middle Field	3	3	0	0
Butler-Armstrong	3	1	1	1
Tioga	15	0	7	8
Southwest Pennsylvania	9	2	1	6
Southeast Ohio	37	440	11	10
West Virginia	75	24	13	53
Total March	162	504	36	79
Total February	180	490	37	76
Difference	18	14	1	3

Summary of Work Under Way

Field—	Rigs	Drlg.	Ttl.
Allegany	0	4	4
Bradford	5	8	13
Venango-Clarion	0	4	4
Middle Field	0	2	2
Butler-Armstrong	1	2	3
Tioga	17	31	48
Southwest Pennsylvania	6	8	14
Southeast Ohio	17	32	49
West Virginia	13	32	44
Total March	58	123	181
Total February	57	154	211
Difference	1	31	30

WELLS COMPLETED

ALLEGANY FIELD

Fee, Ryder & Richmond Oil Corp. 2

Completion 1
Production 2

BRADFORD

Bingham 321, Andrus & MacDowell 132 5
Bingham 368, Wilson & Fitzgibbons 34 2
Freeman, Stuckel & Freeman 40 5
Griffith, E. C. Tanner 8
Quintuple, B. L. Brinton 1
Corwin, Cora M. Simon 1
Melvin, South Penn Oil Co. 1
Borden, T. P. Thompson, Jr. ..... pressure
Boocks, F. M. Boocks 1
Jack, Jack et al 1
Quintuple, Healey Pet. Corp. 1
Quintuple, T. P. Mullhaupt 1
O'Neil, Ball and Ryan 3

Completions 13
Production 30
Pressure 1

VENANGO-CLARION

Rice, Rice and Thompson ..... dry
Osmer, Rice and Thompson ..... dry
Fye, W. H. Master et al 1 1
Scott, William Campbell 1 ..... dry
Kapp, Fryburg Motor Co. 4 ..... gas
Barris, C. C. Barris 8 1

Completions 6
Production 2
Dry 3
Gas 1

MIDDLE FIELD

D. C. and B., Duke and Buck 1
Kapp, T. H. Kervin, Jr. 2
Lot 3,296, Hoskins Roeder et al 91 .. pressure

Completions 3
Production 3
Pressure 1

BUTLER-ARMSTRONG

Zeigler, J. C. Trees 1 ..... gas
Ramsey, Wm. Peifer 1 1
Hockenberry, Ingold and Ruby 20 ..... dry

Completions 3
Production 1
Dry 1
Gas 1

TIOGA FIELD

Perkins, Paul Benedum ..... dry
Fee, Iroquois Gas Co. ..... gas
French, Iroquois Gas Co. ..... gas
Brewer, Iroquois Gas Co. ..... dry
Hall, Bradford Supply Co. ..... dry
Fee, Lamoka Power Co. ..... gas
Bostwick, Trainer et al ..... dry
Losey, Belmont Quadrangle ..... gas
Johnson, Iroquois Gas Co. ..... gas
Deyea, Oriskany Drilling Co. ..... dry
Gordon, Stone Oil & Gas Co. ..... gas
Fee, Crescent Producers Co. ..... gas
Gordon, Lamoka Power Co. ..... gas
Fee, Home Gas Co. ..... dry
Fee, Home Gas Co. ..... dry

Completions 15
Dry 7
Gas 8

SOUTHWEST PENNSYLVANIA

COMPLETIONS

ALLEGHENY COUNTY

Lorish, Lorish O. & G. 3 1
Enders heirs, O. Miller & Co. 1 ..... gas

BEAVER COUNTY

Young, J. L. Abrams 2 1

BUTLER COUNTY

Wilson, McNanny Oil 1 ..... gas

GREENE COUNTY

Stevens, Phila. Nat. Gas 2 ..... gas
Stephens, Equitable Gas 1 ..... gas

WASHINGTON COUNTY

Crile, W. B. Redd & Co. 1 ..... gas
Montgomery, Union G. & O. Corp. 2 .... gas
Sprowls, Union G. & O. Corp. 1 ..... dry

SOUTHEAST OHIO

COMPLETIONS

ATHENS COUNTY

King, Smithenberger et al 1 ..... dry
Nelsonville Foundry Co., Nelsonville Gas 1 ..... gas
Chase, A. H. Heisey & Co. 1 ..... dry
Brechtel, Nesum et al 1 ..... gas
Chapman, Shade River O. & G. 1 ..... gas
Lick Run Coal & Clay Co., A. W. Porter et al 4 ..... gas

COSHOCTON COUNTY

Clark—Preston Oil 1 ..... dry

HOCKING COUNTY

Campbell—Era Oil & Gas 1 3

JEFFERSON COUNTY

Clark, Peters & Co. 1 ..... dry

LICKING COUNTY

Earhart, Pure Oil 2 35

MEDINA COUNTY

Franks, E. R. Edson & Son Co. 13 .... dry
Franks, E. R. Edson & Son Co. 14 3
Packard, E. R. Edson & Son Co. 12 15
Cleveland, Preston Oil 3 12

MONROE COUNTY

Friday, Mount Hope Oil 2 1
Miracle, Robinson & Ball et al 1 2
Bode, Louis A. Timblin et al 17 3
Lihner, Whittmer O. & G. Prop. et al 1 dry

MUSKINGUM COUNTY

Leasure, Preston Oil 1 35
Pletcher, Fritz Oil & Gas 1 ..... gas
Slack, Ohio Fuel Gas 1 ..... gas
Corbin, Atha Oil 1 ..... gas
Leasure, Preston Oil 1 170

NOBLE COUNTY

Hutchins, Frank Worral et al 1 ..... gas
Calland, E. O. Burbacher et al 1 ..... gas

PERRY COUNTY

Brown, Mid-East Co. 2 60
Melick Bros., Atha Oil 17 85

WASHINGTON COUNTY

Crago, William Harris et al 1 1
Lauer, Bay & Weppler et al 6 2
Libbie Ice, Ralph Bros. 1 ..... dry
Goddard, Davis & Co. 1 3
Vaughn, John L. Wagner 1 ..... dry
Lauer, Bay & Weppler et al 5 ..... dry

VINTON COUNTY

Clark, Powers & Henry 2 ..... gas

BELMONT COUNTY

Smith, W. C. McBride, Inc. 1 ..... dry

MORGAN COUNTY

Gifford, W. S. Harris 1 ..... dry

GUERNSEY COUNTY

Stocker, Preston Oil 4 10

WEST VIRGINIA

COMPLETIONS

BOONE COUNTY

Coon, G. S. Coon, 1 ..... gas
Coon, G. S. Coon 2 ..... gas
Coon, G. S. Coon 3 ..... gas
Federal Coal Co., G. L. Cabot 22 ..... gas
Y. & O. Coal Co., G. L. Cabot 7 ..... gas
Arbogast, G. L. Cabot 8 ..... gas
Roberts, Owens Illinois Glass 2 ..... gas
Federal Coal Co., G. L. Cabot 32 ..... gas
Federal Coal Co., G. L. Cabot 45 ..... gas
Winifrede Co., Winifrede Co. 7 ..... gas

CALHOUN COUNTY

Shaffer, United Fuel Gas 4,280 ..... gas
Starcher, Hope Nat. Gas 7,514 ..... dry
Kirby, Conservation O. & G. 1 ..... gas
Hall heirs, Dr. Hively et al 1 ..... gas
Maze, Southern Oil 1 ..... gas
Shaffer, United Fuel Gas 3 ..... gas
May, G. L. Cabot 1 ..... dry
Bland, L. P. Bickel 1 ..... dry
Ball, Hope Natural Gas 5,029 ..... gas
Jackson, Hope Natural Gas 5,235 ..... dry
Eisman, G. W. Hamilton et al 1 ..... gas

CLAY COUNTY

Hill-Long, G. L. Cabot 8 ..... gas
Pierson, United Fuel Gas 4,266 ..... gas
Cochran & Eakle, Thompson Gas 29-T.. gas
Thompson L. & C. Co., H. B. Davenport 3 2
Markle, Pure Oil 2 ..... gas

DODDRIDGE COUNTY

Underwood, J. H. Fentz 4 1
Underwood, Claude Maxwell 1 5
Maxwell, Columbian Carbon 61 ..... gas

FAYETTE COUNTY

New River Collier Co., Montgomery Gas 9 ..... dry
Huddleston, G. L. Cabot 1 ..... dry

GILMER COUNTY

Bennett, Hope Nat. Gas 6,033 ..... gas
Woofter, Gilco O. & G. 1 ..... gas
Radabaugh, L. C. Wagoner et al 1 .... gas
Huffman heirs, Chartiers Oil 5 ..... gas

HARRISON COUNTY

Furner, Furner Oil 8 2
Shinn, Reserve Gas 1 ..... gas

JACKSON COUNTY

Click, Heck Oil 1 ..... gas

KANAWHA COUNTY

Cunningham & Canterbury, O. M. Canterbury 1 ..... gas
Winifrede Co., Winifrede Co. 11 ..... gas
Winifrede Co., Winifrede Co. 13 ..... gas
Winifrede Co., Winifrede Co. 12 ..... gas
Sunday Creek Coal Co., United Fuel Gas 4,277 ..... gas

LINCOLN COUNTY

Hoskinson, Louis R. Sweetland 1 ..... gas
Mullens, Black & Wilkerson 1 ..... dry
Adkins, Conley Gas 3 ..... gas
Breedlove, E. R. Cameron 1 ..... gas

MARION COUNTY

Tennant, Owens Bottle 2 ..... gas
Shackelford, Victor Tennant 1 ..... gas
Thomas, Sutton Bros. 3 ..... gas

MARSHALL COUNTY

Chase heirs, G. B. Patterson 1 ..... gas
Archer, Mfrs. I. & H. 3,468 ..... gas

MINGO COUNTY

Harvey, Dixon O. & G. 1 ..... gas

MONONGALIA COUNTY

Kinney heirs, Pgh. & W. Va. Nat. Gas Corp. 5,295 ..... gas
Shuman, Pgh. & W. Va. Nat. Gas Corp. 5,978 ..... gas

PLEASANTS COUNTY

Boley heirs, Dinsmore & Co. 6 ..... dry
Morris, Albert Neely 1 ..... gas

RITCHIE COUNTY

Wilson, Hope Natural Gas 1 ..... dry
Gainer, Reno Oil 1 ..... gas
McCullough, Bachelor, Choguill & Ray, Inc. 8 ..... gas

ROANE COUNTY

McQuain heirs, Wiseman & Jackson 1.. dry

WETZEL AND TYLER COUNTIES

Lemasters, Wade, Carney et al 1 4
Alexander, R. V. Hennen, trustee 1 .. dry
Lemley, Lemley O. & G. 1 ..... gas
Lemasters, Grass Lick O. & G. 1 4
Bayard, Mfrs. L. & H. 3,468 ..... gas
George, Local Syndicate 1 ..... dry
Lemasters, Union G. & O. Corp. ..... gas

WAYNE COUNTY

Start, W. P. Floyd 1 ..... dry
Streuber, Chartiers Oil 2 ..... gas
Vance, Wayne United Fuel & Gas 34 .. gas

WIRT COUNTY

Jackson, Grover Whitecotton 2 2

WOOD COUNTY

Henrie, G. W. Grant et al 8 2
Henrie, G. W. Grant et al 7 2

ILLINOIS FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Clark	0	0	0	0	2	2	
Cumberland	0	0	0	0	0	1	1
Crawford	2	25	1	0	3	0	3
Lawrence	0	0	0	0	0	0	0
Wabash	1	3	0	0	1	0	1
St. Clair	1	0	1	0	0	3	3
Effingham	0	0	0	0	0	1	1
Randolph	0	0	0	0	0	2	2
Monroe	1	0	1	0	0	2	3
Washington	0	0	0	0	0	1	1
Clinton	0	0	0	0	0	1	1
Boone	0	0	0	0	0	1	1
Madison	0	0	0	0	0	2	2
Total Mar.	5	28	3	0	4	16	20
Total Feb.	8	7	5	1	3	19	22
Difference	3	21	2	1	1	3	2

WELLS COMPLETED

CRAWFORD COUNTY

Montgomery—John Magill, W. C. McBride, Inc. 4 25
Wm. Dickinson, W. C. McBride, Inc. 1 dry

Wells completed 2
Production 25
Dry 1

LAWRENCE COUNTY

Petty—H. C. Johnson, Ohio Oil 2 ..... abd
A. R. Applegate, Ohio Oil 22 ..... abd
C. L. Lewis, Ohio Oil 20 ..... abd
W. R. Crackle, Ohio Oil 51 ..... abd
Bridgeport—H. K. Seed, Snowden-McSweeney 2 ..... abd
Lawrence—Thomas Smith, Ohio Oil 2.. abd
Dennison—S. J. Gee No. 2 tr., Ohio Oil 1 abd

Wells abandoned 7

WABASH COUNTY

Wabash—Adam Schaffer, Robinson Oil 2 3

ST. CLAIR COUNTY

Centerville—Clyde Sparks, C. H. Bayliss & Co. 1 ..... dry
Sugar Loaf—J. F. Otis, Geo. P. Hironemus & Co. 1 ..... abd
W. K. Melton, Geo. P. Hironemus & Co. 1 ..... abd
J. E. Wade, F. G. Goodfellow Rec. 1 abd

Wells completed 1
Dry 1
Wells abandoned 3

MONROE COUNTY

Renault—D. Offerman, T. J. Collins 1.. dry

LIMA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Wood	0	0	0	0	1	0	1
Hancock	0	0	0	0	0	2	2
Mercer	0	0	0	0	0	1	1
Sandusky	0	0	0	0	0	1	1
Seneca	5	0	0	5	0	6	6
Lucas	0	0	0	0	0	2	2
Ottawa	0	0	0	0	0	2	2
Shelby	1	0	0	1	0	0	0
Hardin	3	135	1	1	3	4	7
Wyandot	1	0	0	1	0	0	0
Crawford	1	0	1	0	0	0	0
Total Mar.	11	135	2	8	4	18	22
Total Feb.	13	5	4	8	4	21	25
Difference	2	130	2	0	0	3	3

WELLS COMPLETED

WOOD COUNTY

Liberty—S. H. Powell, Sec. 2, The Ohio Oil 3, 7, 9, 16 ..... abd
S. H. Powell, Sec. 11, The Ohio Oil 10, 20, 25 ..... abd
H. C. Killian, The Ohio Oil 8 ..... abd
Jim Johnson, The Ohio Oil 6, 18, 21, 26, 21 ..... abd
Levina Munn, The Ohio Oil 5 ..... abd
E. Spooner west 80 ac., The Ohio Oil 12 ..... abd
Thomas Carr, The Ohio Oil 9 ..... abd
Thomas McKnight, The Ohio Oil 7 .. abd
Mercer & Carlin, The Ohio Oil 5 .... abd
Portage—Sarah Wonder, The Ohio Oil 1, 3 ..... abd
Ross—Andrew Polster, The Ohio Oil 8. abd
Henry—Franks, White & Co., The Ohio Oil 13, 27 ..... abd
Vincent H. Coons, The Ohio Oil 3, 25 abd
Troy—R. H. Rolfe, The Ohio Oil 2, 3, 4, 5, 8, 9 ..... abd
Freedom—H. Westerhouse, The Ohio Oil 3, 4, 7 ..... abd
Henry Diehl, The Ohio Oil 2, 3, 4, 15, 17, 24 ..... abd
Henry A. Moorman, The Ohio Oil 1, 3, 4 ..... abd
Fuhr-Villwock, Tract 6, The Ohio Oil 45, 60, 65, 73, 74, 83, 97, 111, 112, 117 ..... abd
Fuhr-Villwock, Tract 7, The Ohio Oil 35, 61, 62, 63, 64, 75, 76, 82, 121 ... abd
Plain—B. P. Stratton, Murray B. Chidester 1 ..... abd
Lehman Brothers, Hartman & George 1, 4, 8 ..... abd.

Wells abandoned 66

HANCOCK COUNTY

Liberty—R. W. Boyd, The Ohio Oil 6, 16 abd
Thomas Goudy, The Ohio Oil 2, 3, 12 abd

Wells abandoned 5

MERCER COUNTY

Union—J. W. Dutton, The Ohio Oil 1, 2 5 ..... abd
James Clover, The Ohio Oil 2, 4, 5, 6, 7, 8, 9, 10, 11 ..... abd

Wells abandoned 12

SANDUSKY COUNTY

Jackson—S. A. Zimmerman, The Ohio Oil 2, 3, 4 ..... abd
Rachel Zimmerman, The Ohio Oil 1, 2 abd
Washington—John Houts, The North Ohio Oil 1, 2, 3, 4, 5, 6, 7, 8 ..... abd
Scott—J. C. Forster, The Ohio Oil 1, 3, 8, 9, 11, 12, 14, 81, 22 ..... abd
A. B. Taylor, The Ohio Oil 10 ..... abd

Wells abandoned 22

SENECA COUNTY

Liberty—H. Wright, Sandusky Gas 3 .. gas
Schlachter-Fleck, Sandusky Gas 4 ... gas
Wilson Betts Estate, Sandusky Gas 1 gas
Pleasants—C. & B. Liller, The Ohio Oil 3 ..... gas
Hopewell—George Doran, Sandusky Gas 1 ..... gas

Wells completed 5
Gas 5

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SHELBY COUNTY

Cynthian—George W. Trieber, Ellerman Oil 2 ..... gas

HARDIN COUNTY

Cessna—A. W. Kreitzler, Appalachian Gas Corp. 1 135
Pleasants—Minnie Burnison, Pleasants Oil & Gas 4 ..... gas
H. L. Oats, Ohio Fuel Gas 1-5,408 ..... dry

Wells completed 3
Production 135
Dry 1
Gas 1

WYANDOT COUNTY

Tymochtee—Byran E. Powell, Jones & Coyle 1 ..... gas
Mary Chaney, Jones & Coyle 2 ..... abd

Wells completed 1
Gas 1
Wells abandoned 1

CRAWFORD COUNTY

Auburn—G. H. Parker, Tiro Oil & Gas 1 ..... dry

INDIANA

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drlg.	Ttl.
Jay	1	3	0	0	0	1	1
Adams	0	0	0	0	0	1	1
Huntington	0	0	0	0	0	2	2
Gibson	0	0	0	0	0	2	2
Pike	3	0	2	1	0	3	3
Daviess	0	0	0	0	0	5	5
Vigo	0	0	0	0	0	1	1
Sullivan	2	0	1	1	0	3	3
Warrick	0	0	0	0	0	2	2
Spencer	0	0	0	0	0	10	10
Perry	3	50	1	0	0	2	2
White	0	0	0	0	0	1	1
Marshall	0	0	0	0	1	1	2
Monroe	2	0	1	1	0	2	2
Knox	1	0	0	1	0	3	3
Lagrange	0	0	0	0	0	1	1
Posey	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Laporte	0	0	0	0	0	1	1
DeKalb	0	0	0	0	0	1	1
Rush	0	0	0	0	0	1	1
Floyd	0	0	0	0	0	1	1
Vandenburg	1	5	0	0	1	2	3
Hancock	0	0	0	0	0	2	2
Elkhart	0	0	0	0	1	0	1
Porter	0	0	0	0	0	1	1
Lake	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	1	1
Total Mar.	13	58	5	4	3	53	56
Total Feb.	16	168	4	6	2	52	54
Difference	3	110	1	2	1	1	2

WELLS COMPLETED
JAY COUNTY

Madison—Henry Ohler, R. D. Hance 1 .. 3

LEGAL

Notice of sale of oil and gas lease, Department of the Interior, United States Land Office, Washington, D. C., April 6, 1931. Notice is given that oil and gas lease under Sec. 17 of the leasing act of February 25, 1920 (41 Stat. 437) on the following described land in Oklahoma County, Oklahoma, is offered for sale at the royalty rates and in accordance with the drilling requirements fixed in the standard lease form, copy of which may be procured from the Commissioner of the General Land Office: T. 12 N., R. 3 W., Sec. 35, Lot 8, containing 0.56 acre as shown upon the township plat approved September 23, 1873; including all Government rights to the accretions appurtenant thereto, and riparian rights within the abandoned bed of the North Fork of the Canadian River extending to the medial line thereof, but not beyond the position of the original left bank of said river, amounting to 0.66 acre; and subject to the right of way of the county highway known as East Reno Avenue; the whole being more particularly described as follows: Beginning at the point for the meander corner on the original right bank of the river on the south boundary of Sec. 35, T. 12 N., R. 3 W., on the center line of East Reno Avenue, from which point of beginning the point for the cor. of Secs. 1, 2, 35, and 36, located at the intersection of the center lines of East Reno Avenue and Eastern Avenue bears S.89°57'30"E., 1.39 chs., distant; thence from said point of beginning, by metes and bounds (1) N.46°00' E., 1.13 chs., to the medial line of the abandoned channel; (2) thence along the medial line N.44°00'W., 1.05 chs., to the position of the original left bank; (3) thence along the alinement of the original left bank N.71°30' W., 1.14 chs.; (4) thence S.76°30'W., 2.72 chs.; (5) thence S. 67°15'W., 2.85 chs., to the medial line of the abandoned channel; (6) thence along the medial line, S.6°00'E., 0.37 chs. to the south boundary of Sec. 35 and center line of East Reno Avenue; (7) thence along the line between Secs. 2 and 35, and on the center line of East Reno Avenue, S.89°57'30"E., 0.90 chs., to the point for the meander corner on the original right bank, and 6.91 chs., to the place of beginning. Said tract will be leased to the responsible qualified bidder offering the highest cash bonus for a lease at the prescribed royalty. The successful bidder, when so notified, will be required to deposit cash, or certified check on a solvent bank, for one-fourth of his bid and pay the remaining three-fourths upon issuance of lease. Any lease issued will be subject to the act approved March 4, 1931 (Pub. No. 853), amending Secs. 17 and 27 of the General Leasing Act of February 25, 1920 (41 Stat. 437). Sealed bids will be received in the office of the Secretary of the Interior up to 10:00 A.M., May 11, 1931. Bidders are warned against violation of the provisions of Sec. 59, U. S. Criminal Code, approved March 4, 1909, prohibiting any unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. C. C. Moore, Commissioner.

ADAMS COUNTY

Jefferson—D. Studebaker, Berninda O. & G. 8 ..... abd
Blue Creek—D. Dudgeon, Ohio Oil Co. (Indiana Div.) 5 ..... abd

Abandoned 2

PIKE COUNTY

Washington—Matilda Bilderback, Chas. C. Taliaferro, Jr. 2 ..... gas
Barney Fair, H. H. Risher 1 ..... dry
Sarah Stansel, Jas. E. Young 2 ..... dry
Madison—W. H. Gladish, Ohio Oil 11.. abd

Wells completed 3
Dry 2
Gas 1
Abandoned 1

SULLIVAN COUNTY

Curry—T. H. Martz est., Jas. C. Ellis 1 dry
Turman—Katherine Piety, H. Huntsman & Co. 2 ..... gas

Wells completed 2
Dry 1
Gas 1

PERRY COUNTY

Tobin—Isaac Seibert, Seitz & Co. 1.... dry
Clark—Frank Cassidy, Conyers, Roetzel & Co. 3 30
Alvin Fromehville, Conyers, Roetzel & Co. 1 20

Wells completed 3
Production 50
Dry 1

MONROE COUNTY

Benton—Ray Ealy, Ohio Oil and Pet. Explts. 1 ..... gas
Salt Creek—Mahala Baxter, Pet. Exploration 1 ..... dry

Wells completed 2
Dry 1
Gas 1

KNOX COUNTY

Busseron—Hall, Jas. H. Gardner Pet. 1 gas

VANDENBURG COUNTY

Center—Geo. Hornby, Vandenburg Oil 2 5

MICHIGAN FIELDS

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Muskegon	0	0	0	0	1	5	6
Isabella	2	130	0	1	11	38	49
Midland	0	0	0	0	3	15	18
Clare	0	0	0	0	4	2	6
Mecosta	0	0	0	0	1	0	1
Lake	0	0	0	0	0	2	2
Cass	0	0	0	0	0	2	2
Kent	0	0	0	0	1	2	3
Ottawa	0	0	0	0	0	2	2
Oceana	0	0	0	0	1	5	6
Bay	0	0	0	0	1	1	2
Mason	0	0	0	0	0	4	4
Eaton	0	0	0	0	1	1	2
Kalkaska	0	0	0	0	1	1	2
Monroe	1	3	0	0	0	2	2
Iosco	0	0	0	0	2	0	2
Missaukee	1	0	0	1	0	1	1
Washtenaw	0	0	0	0	0	2	2
Delta	0	0	0	0	1	0	1
Montmorency	0	0	0	0	1	0	1
Kalamazoo	0	0	0	0	0	1	1
Van Buren	0	0	0	0	0	2	2
Sanilac	0	0	0	0	3	0	3
Gratiot	0	0	0	0	4	2	6
Shiawassee	0	0	0	0	2	2	4
Livingston	0	0	0	0	1	2	3
Allegan	0	0	0	0	2	4	6
Cheybogan	0	0	0	0	0	1	1
Osceola	0	0	0	0	1	0	1
St. Clair	0	0	0	0	2	0	2
Gennessee	0	0	0	0	1	0	1
Alpena	0	0	0	0	0	1	1
Ogemaw	0	0	0	0	1	0	1
Wexford	1	0	1	0	0	0	0
Total Feb.	14	813	9	1	67	97	164
Difference	9	680	8	1	21	3	18

WELLS COMPLETED
MUSKEGON COUNTY

Muskegon—Herman Heinz, Muskegon Oil Corp. 1 ..... abd
Herman Heinz, Muskegon Deep Well Co. 5 ..... abd
Albert Heinz, Muskegon Oil Corp. 2.. abd
Torrent estate, Reed Oil 4 ..... abd
Laketon—George S. Brand, Republic Oil 2 ..... abd

Wells abandoned 5

ISABELLA COUNTY

Vernon—Charles Dunler, Mellon-Pollock Oil 1 130
Mike McGuire, Gibson-Johnson-Borden 1 ..... gas

Wells completed 2
Production 130
Gas 1

MONROE COUNTY

Milan—George Faskins, E. L. Dayton 1 3

MISSAUKEE COUNTY

Pioneer—G. D. Miller & Co., Henry Miltner, trustee 1 ..... gas

WEXFORD COUNTY

Haring—J. Jorgenson, C. R. Smith, trustee 1 ..... dry

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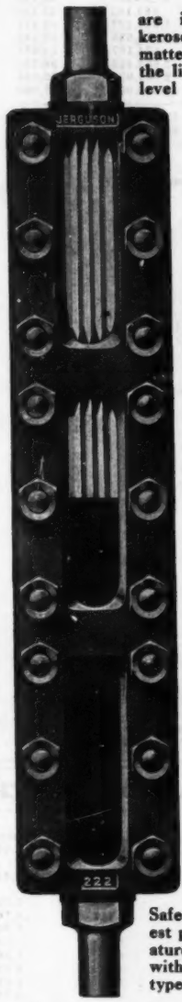

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Report for Month of February

Runs

	Month (bbls.)	Dly. av. (bbls.)
Prairie P. L. Co.*	837,880	31,710
Gulf P. L. Co.	1,196,957	42,749
Texas P. L. Co.	593,142	21,184
Magnolia P. L. Co.	1,511,227	53,972
Empire P. L. Co.	1,675,585	59,842
Cosden P. L. Co.	674,187	24,078
Stanolind P. L. Co.*	2,693,418	96,193
Oklahoma P. L. Co.	2,389,924	85,354
Other lines*	5,516,000	197,000
Total February	17,138,296	612,082
Total March	16,271,263	589,394
Difference	1,132,967	22,688

Shipments

Prairie P. L. Co.†	2,147,670	76,702
Gulf P. L. Co.	1,007,357	35,976
Texas P. L. Co.	931,791	35,044
Magnolia P. L. Co.	1,308,758	46,741
Empire P. L. Co.	1,824,912	65,176
Cosden P. L. Co.	777,082	27,753
Stanolind P. L. Co.†	2,936,612	104,879
Oklahoma P. L. Co.	2,440,712	87,168
Other lines*	5,572,000	199,000
Total February	19,021,890	678,460
Total March	19,602,309	632,331
Difference	580,419	46,129

Stocks

Prairie O. & G. Co.*	27,556,000
Gulf P. L.-Gypsy Oil Co.	9,034,923
The Texas Company	3,950,066
Magnolia Petroleum Co.	6,095,273
Empire P. L. Co.	5,321,285
Mid-Continent Pet. Corp.	3,742,097
Stanolind C. O. Pur. Co.*	18,270,000
Oklahoma P. L. Co.	2,531,264
Carter Oil Co.	9,226,319
Other lines*	32,697,000
Total February	118,434,237
Total March	119,400,561
Difference	966,324

*Estimated. †Prairie and Stanolind shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR FEBRUARY

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for January and February:

	Jan., 1931	Feb., 1931
Nat. Transit	127,013.27	121,907.94
S. W. Pa. P. L.	75,179.62	66,984.81
Eureka P. L.	292,615.52	271,589.18
Buckeye P. L. (Macksburg)	311,885.14	283,050.42
Buckeye P. L. (Cleveland)	11,175.80	10,192.36
Buckeye P. L. (Lima, etc.)	91,601.51	78,304.68
Indiana P. L.	3,805.02	3,595.88
Cumberland P. L.	174,361.92	158,426.03
N. Y. Transit	37,836.13	25,972.80
Tide Water P. L.	35,747.99	33,230.37
Pure Oil	230,381.74	188,731.57
Stoll Oil Ref.		25,924.10
Bradford Tran.	310,660.96	286,659.50
Total	1,672,114.62	1,544,567.64
Daily average	53,939.18	55,163.13

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan., 1931	Feb., 1931
Nat. Transit	431,427.59	434,836.96
S. W. Pa. P. L.	311,131.19	349,431.73
Eureka P. L.	333,443.59	329,203.94
Buckeye P. L. (Macksburg)	257,687.49	255,836.89
Buckeye P. L. (Cleveland)	1,462.63	1,703.34
Buckeye P. L. (Lima, etc.)	1,121,462.88	1,346,381.03
Indiana P. L.	644,291.15	704,037.29
Cumberland P. L.	109,598.07	95,198.73
Southern P. L.	65,326.45	36,948.86
N. Y. Transit	174,756.42	158,600.37
Northern P. L.	230,189.95	159,788.80
Tide Water P. L.	536,454.77	454,444.14
Pure Oil	86,532.61	138,500.91
Indian Ref.	278,699.79	
Bradford Tran.	364,296.68	337,789.39
Tuscarora	489,729.45	335,137.21
Total	5,436,465.31	5,127,844.59
Daily average	175,369.85	183,494.45

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of January and February:

	Jan., 1931	Feb., 1931
Nat. Transit	839,235.79	823,437.33
S. W. Pa. P. L.	432,473.26	432,681.19
Eureka P. L.	1,548,201.04	1,599,276.50
Buckeye P. L. (Macksburg)	597,544.40	592,937.82
Buckeye P. L. (Cleveland)	54,263.96	38,449.28
Buckeye P. L. (Lima, etc.)	4,554,991.51	4,308,481.54
Indiana P. L.	562,567.51	546,607.37
Cumberland P. L.	623,458.27	645,138.76
Southern P. L.	265,515.03	323,636.70
N. Y. Transit	161,624.59	120,111.18
Northern P. L.	368,986.82	325,464.65
Tide Water P. L.	979,269.83	944,684.28
Pure Oil	605,621.04	649,860.39
Indian Ref.	70,080.52	
Tuscarora	14,447.96	13,749.38
Brad. Trans.	152,811.37	141,883.72
Total	11,831,092.90	11,506,489.99
Increase	79,140.49	
Decrease		324,602.91

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of January and February, showing gross stocks of the above fields:

	Jan., 1931	Feb., 1931
Pennsylvania	3,904,310.87	3,844,013.10
Lima	800,240.43	804,771.54
Kentucky	665,271.73	655,160.44
Mid-Continent	5,863,671.90	5,564,627.27
Illinois	3,659.28	
Michigan	593,938.69	637,917.64
Total	11,831,092.90	11,506,489.99

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1928	1929	1930	1931
January	52,904	51,749	75,907	53,939
February	57,002	51,833	79,256	55,163
March	57,485	54,252	76,688	.....
April	56,812	58,444	84,536	.....
May	62,067	59,902	80,548	.....
June	58,230	58,833	75,430	.....
July	57,144	66,087	68,921	.....
August	57,745	66,087	64,291	.....
September	53,487	67,315	56,595	.....
October	55,100	76,093	58,179	.....
November	53,865	74,831	52,232	.....
December	52,025	74,561	53,999	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1928	1929	1930	1931
January	146,465	165,731	217,623	175,369
February	167,368	159,387	224,355	183,494
March	158,883	161,474	228,846	.....
April	172,935	169,737	241,845	.....
May	180,559	184,251	248,383	.....
June	188,624	185,404	234,401	.....
July	189,470	194,762	207,094	.....
August	192,853	194,946	205,506	.....
September	194,138	201,214	193,999	.....
October	176,000	191,367	157,675	.....
November	176,898	202,743	146,638	.....
December	173,572	186,257	143,001	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1929	1930	1931
January	7,596,564	13,220,045	11,831,093
February	8,738,835	12,991,561	11,506,489
March	9,002,058	13,247,217	.....
April	8,978,172	13,233,941	.....
May	8,902,560	13,052,953	.....
June	8,921,275	13,396,855	.....
July	9,211,596	13,368,562	.....
August	9,440,642	13,047,051	.....
September	9,443,067	12,812,918	.....
October	9,441,101	12,437,555	.....
November	9,868,538	11,851,380	.....
December	11,253,953	11,751,953	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	1,920,356.63
Runs from wells	406,054.17
Other receipts	107,696.79
Regular deliveries	428,310.11
Other deliveries	99,496.61

The amount of Illinois oil run by the Tide Water Pipe Co. in February was 23,230.37 bbls. Deliveries were 22,952.74 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1931—	Runs	Deliveries
January	468,429.04	669,573.19
February	429,284.54	461,262.84
1930—		
January	543,387.95	498,293.91
February	548,416.33	414,536.59
March	631,944.49	469,119.53
April	530,074.22	509,304.60
May	605,147.37	504,069.84
June	572,662.57	468,658.81
July	604,529.54	388,454.47
August	594,642.12	375,742.43
September	457,001.11	371,691.63
October	478,442.12	320,688.73
November	422,794.68	355,403.12
December	556,418.78	363,719.55

Tide Water Pipe Co., Ltd., also delivered in February 122,174.15 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
March	10,548	3,065	28,871	8,774	22,484	73,742	.....	.....	.....	.....	805	74,546
April	7,767	.....	14,369	11,600	7,433	41,167	.....	.....	.....	.....	7,600	48,767
May	5,194	8,451	28,161	9,484	2,774	54,064	.....	.....	.....	.....	774	54,838
June	8,300	.....	32,933	20,767	3,333	65,333	.....	.....	.....	.....	2,400	67,733
July	17,355	7,774	42,419	23,839	6,452	98,839	.....	.....	.....	.....	4,645	103,484
August	7,413	8,742	38,968	21,226	5,258	81,613	.....	.....	.....	.....	97	81,710
September	6,300	6,400	25,600	13,400	9,567	61,267	.....	.....	.....	.....	2,433	63,700
October	2,516	3,065	27,258	16,419	4,903	54,161	.....	.....	.....	.....	5,355	59,516
November	8,367	6,333	33,800	17,733	4,600	70,733	.....	.....	.....	.....	4,800	75,533
December	5,516	4,323	30,645	9,678	3,580	53,742	.....	.....	.....	.....	4,645	58,387
January	8,387	6,613	21,968	14,678	11,096	62,742	.....	.....	.....	.....	6,129	68,871
February	5,787	2,713	29,143	4,000	5,750	47,393	.....	.....	.....	.....	3,750	51,143

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1930-31—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
March	38,356	4,839	151,806	36,645	24,903	256,548	4,323	11,645	839	2,419	19,226	274,774
April	31,400	5,933	133,500	40,433	19,434	229,700	.....	7,400	2,433	4,167	14,000	237,700
May	34,129	9,322	174,194	39,391	25,226	275,161	8,194	11,548	2,935	1,323	24,000	299,161
June	51,533	15,667	121,067	45,033	25,033	258,333	4,413	17,267	2,167	1,333	25,300	283,633
July	42,097	9,548	154,968	37,935	36,032	280,580	5,678	9,161	2,097	2,387	19,323	299,903
August	39,032	4,484	145,613	33,355	25,097	247,581	8,419	9,323	8,548	3,000	29,290	276,871
September	38,367	8,533	150,933	34,500	25,567	258,400	6,433	12,234	.....	3,800	22,467	280,867
October	19,339	11,742	146,194	35,356	26,967	240,097	6,065	7,067	2,774	2,545	18,451	258,548
November	39,633	35,900	124,633	36,467	24,667	261,300	3,467	7,366	.....	1,767	11,600	272,900
December	31,419	14,033	122,774	32,839	33,774	224,839	6,290	10,613	2,097	290	19,290	244,129
January	17,613	13,519	154,225	32,902	30,612	248,871	2,032	11,677	2,097	3,097	18,903	267,774
February	31,321	16,929	127,786	31,714	26,857	234,607	4,536	11,571	.....	536	16,643	251,250

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1930—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
February:	Month	20,885,660	17,977,634	23,314,637	2,965,704	1,608,376	1,738,250	2,027,984	3,963,000	74,481,236
	Daily average	745,916	642,058	832,669	105,918	57,442	62,080	72,428	141,536	2,660,044
March:	Month	19,699,979	19,115,406	25,803,082	3,504,395	1,817,871	1,942,938	2,327,028	4,223,000	78,143,699
	Daily average	635,483	616,626	832,679	113,045	58,641	62,675	75,388	136,161	2,520,764
April:	Month	18,768,743	19,541,310	24,799,763	3,734,253	1,734,460	1,909,552	2,334,510	4,257,000	77,069,891
	Daily average	625,625	651,377	826,659	124,475	57,482	63,652	77,827	141,900	2,568,996
May:	Month	19,044,444	20,587,503	26,219,483	3,978,385	1,659,895	1,907,482	2,565,219	4,414,000	80,376,776
	Daily average	614,337	664,113	845,786	128,335	53,545	61,543	82,749	142,387	2,592,799
June:	Month	18,020,795	19,754,700	25,642,705	3,765,060	1,704,060	1,925,621	2,519,190	4,288,000	77,621,131
	Daily average	600,693	658,490	854,790	125,502	56,802	64,187	83,973	142,933	2,587,371
July:	Month	18,802,024	18,032,514	25,973,531	3,541,409	1,713,680	2,079,769	3,275,894	3,830,000	77,248,811
	Daily average	606,517	581,694	857,856	114,239	55,280	67,089	105,674	123,548	2,491,897
August:	Month	18,770,466	17,162,034	25,069,598	3,491,530	1,700,102	2,151,120	3,193,341	3,417,000	74,955,191
	Daily average	605,499	553,614	808,696	112,630	54,842	69,391	103,011	110,226	2,417,909
September:	Month	17,984,306	16,509,120	23,111,822	3,405,510	1,583,280	2,008,060	3,239,010	3,396,000	71,237,108
	Daily average	599,477	550,304	770,394	113,517	52,776	66,935	107,967	113,200	2,374,570
October:	Month	18,244,053	16,632,523	23,626,553	3,571,913	1,636,552	2,142,885	3,225,550	3,627,000	72,707,029
	Daily average	588,518	536,533	762,147	115,223	52,792	69,125	104,050	117,000	2,345,288
November:	Month	18,109,459	14,941,770	22,035,222	3,459,330	1,557,870	2,136,948	2,957,100	3,222,000	68,419,699
	Daily average	603,648	498,059	734,507	115,311	51,929	71,231	98,570	107,400	2,280,654
December:	Month	17,786,728	15,067,103	21,810,359	3,432,661	1,590,951	2,157,534	3,118,662	3,328,000	68,281,998
	Daily average	573,765	485,713	703,560	110,731	51,321	69,598	100,602	107,355	2,202,645
1931—										
January:	Month	16,485,798	14,850,953	20,690,452	3,149,073	1,574,955	2,131,937	2,966,142	3,374,000	65,223,310
	Daily average	531,796	479,063	667,435	101,583	50,805	68,772	95,682	108,839	2,103,978
	Total 12 months	222,602,455	210,162,560	287,798,202	41,999,223	19,872,052	24,232,456	33,759,931	45,339,000	885,765,879